

FGSL

Generated by Doxygen 1.8.17

1 Main Page	1
2 Introduction	3
3 Comments on vectors and matrices	5
4 Comments on basis splines	7
5 Comments on chebyshev approximation	9
6 Comments on complex numbers	11
7 Comments on numerical derivatives	13
8 Comments on Hankel transforms	15
9 Comments on eigensystems	17
10 Comments on error handling	19
11 Comments on fast Fourier transforms	21
12 Comments on digital filtering	23
13 Comments on fitting of functions	25
14 Comments on histograms	27
15 Comments on IEEE support	29
16 Comments on numerical integration routines	31
17 Comments on interpolation routines	33
18 Comments on auxiliary I/O routines	35
19 Comments on linear algebra routines	37
20 Comments on elementary mathematical functions	39
21 Comments on minimization routines	41
22 Comments on miscellaneous support routines	43
23 Comments on monte carlo routines	45
24 Comments on moving window statistics	47
25 Comments on nonlinear least squares fitting	49
26 Comments on large linear least square systems	51

27 Comments on multidimensional minimization	53
28 Comments on multidimensional root finding	55
29 Comments on ntuples	57
30 Comments on ordinary differential equations	59
31 Comments on permutations, combinations and multisets	61
32 Comments on polynomials	63
33 Comments on random numbers	65
34 Comments on root finding	67
35 Comments on running statistics	69
36 Comments on simulated annealing	71
37 Comments on sorting	73
38 Comments on special functions	75
39 on sparse matrix linear algebra	79
40 Comments on sparse matrix routines	81
41 Comments on statistical functions	83
42 Comments on series acceleration	85
43 Comments on wavelet transforms	87
44 Modules Index	89
44.1 Modules List	89
45 Data Type Index	91
45.1 Data Types List	91
46 File Index	95
46.1 File List	95
47 Module Documentation	97
47.1 fgsl Module Reference	97
47.1.1 Variable Documentation	110
47.1.1.1 cblascolmajor	110
47.1.1.2 cblasconjtrans	110
47.1.1.3 cblasleft	110
47.1.1.4 cblaslower	110

47.1.1.5 cblasnonunit	110
47.1.1.6 cblasnotrans	110
47.1.1.7 cblasright	110
47.1.1.8 cblasrowmajor	111
47.1.1.9 cblastrans	111
47.1.1.10 cblasunit	111
47.1.1.11 cblasupper	111
47.1.1.12 fgsl_char	111
47.1.1.13 fgsl_const_cgsm_acre	111
47.1.1.14 fgsl_const_cgsm_angstrom	111
47.1.1.15 fgsl_const_cgsm_astronomical_unit	111
47.1.1.16 fgsl_const_cgsm_bar	112
47.1.1.17 fgsl_const_cgsm_barn	112
47.1.1.18 fgsl_const_cgsm_bohr_magneton	112
47.1.1.19 fgsl_const_cgsm_bohr_radius	112
47.1.1.20 fgsl_const_cgsm_boltzmann	112
47.1.1.21 fgsl_const_cgsm_btu	112
47.1.1.22 fgsl_const_cgsm_calorie	112
47.1.1.23 fgsl_const_cgsm_canadian_gallon	113
47.1.1.24 fgsl_const_cgsm_carat	113
47.1.1.25 fgsl_const_cgsm_cup	113
47.1.1.26 fgsl_const_cgsm_curie	113
47.1.1.27 fgsl_const_cgsm_day	113
47.1.1.28 fgsl_const_cgsm_dyne	113
47.1.1.29 fgsl_const_cgsm_electron_charge	113
47.1.1.30 fgsl_const_cgsm_electron_magnetic_moment	114
47.1.1.31 fgsl_const_cgsm_electron_volt	114
47.1.1.32 fgsl_const_cgsm_erg	114
47.1.1.33 fgsl_const_cgsm_faraday	114
47.1.1.34 fgsl_const_cgsm_fathom	114
47.1.1.35 fgsl_const_cgsm_fluid_ounce	114
47.1.1.36 fgsl_const_cgsm_foot	114
47.1.1.37 fgsl_const_cgsm_footcandle	115
47.1.1.38 fgsl_const_cgsm_footlambert	115
47.1.1.39 fgsl_const_cgsm_gauss	115
47.1.1.40 fgsl_const_cgsm_gram_force	115
47.1.1.41 fgsl_const_cgsm_grav_accel	115
47.1.1.42 fgsl_const_cgsm_gravitational_constant	115
47.1.1.43 fgsl_const_cgsm_hectare	115
47.1.1.44 fgsl_const_cgsm_horsepower	116
47.1.1.45 fgsl_const_cgsm_hour	116
47.1.1.46 fgsl_const_cgsm_inch	116

47.1.1.47 fgsl_const_cgsm_inch_of_mercury	116
47.1.1.48 fgsl_const_cgsm_inch_of_water	116
47.1.1.49 fgsl_const_cgsm_joule	116
47.1.1.50 fgsl_const_cgsm_kilometers_per_hour	116
47.1.1.51 fgsl_const_cgsm_kilopound_force	117
47.1.1.52 fgsl_const_cgsm_knot	117
47.1.1.53 fgsl_const_cgsm_lambert	117
47.1.1.54 fgsl_const_cgsm_light_year	117
47.1.1.55 fgsl_const_cgsm_liter	117
47.1.1.56 fgsl_const_cgsm_lumen	117
47.1.1.57 fgsl_const_cgsm_lux	117
47.1.1.58 fgsl_const_cgsm_mass_electron	118
47.1.1.59 fgsl_const_cgsm_mass_muon	118
47.1.1.60 fgsl_const_cgsm_mass_neutron	118
47.1.1.61 fgsl_const_cgsm_mass_proton	118
47.1.1.62 fgsl_const_cgsm_meter_of_mercury	118
47.1.1.63 fgsl_const_cgsm_metric_ton	118
47.1.1.64 fgsl_const_cgsm_micron	118
47.1.1.65 fgsl_const_cgsm_mil	119
47.1.1.66 fgsl_const_cgsm_mile	119
47.1.1.67 fgsl_const_cgsm_miles_per_hour	119
47.1.1.68 fgsl_const_cgsm_minute	119
47.1.1.69 fgsl_const_cgsm_molar_gas	119
47.1.1.70 fgsl_const_cgsm_nautical_mile	119
47.1.1.71 fgsl_const_cgsm_newton	119
47.1.1.72 fgsl_const_cgsm_nuclear_magneton	120
47.1.1.73 fgsl_const_cgsm_ounce_mass	120
47.1.1.74 fgsl_const_cgsm_parsec	120
47.1.1.75 fgsl_const_cgsm_phot	120
47.1.1.76 fgsl_const_cgsm_pint	120
47.1.1.77 fgsl_const_cgsm_plancks_constant_h	120
47.1.1.78 fgsl_const_cgsm_plancks_constant_hbar	120
47.1.1.79 fgsl_const_cgsm_point	121
47.1.1.80 fgsl_const_cgsm_poise	121
47.1.1.81 fgsl_const_cgsm_pound_force	121
47.1.1.82 fgsl_const_cgsm_pound_mass	121
47.1.1.83 fgsl_const_cgsm_poundal	121
47.1.1.84 fgsl_const_cgsm_proton_magnetic_moment	121
47.1.1.85 fgsl_const_cgsm_psi	121
47.1.1.86 fgsl_const_cgsm_quart	122
47.1.1.87 fgsl_const_cgsm_rad	122
47.1.1.88 fgsl_const_cgsm_roentgen	122

47.1.1.89 fgsl_const_cgsm_rydberg	122
47.1.1.90 fgsl_const_cgsm_solar_mass	122
47.1.1.91 fgsl_const_cgsm_speed_of_light	122
47.1.1.92 fgsl_const_cgsm_standard_gas_volume	122
47.1.1.93 fgsl_const_cgsm_std_atmosphere	123
47.1.1.94 fgsl_const_cgsm_stefan_boltzmann_constant	123
47.1.1.95 fgsl_const_cgsmstilb	123
47.1.1.96 fgsl_const_cgsmstokes	123
47.1.1.97 fgsl_const_cgsm_tablespoon	123
47.1.1.98 fgsl_const_cgsm_tea_spoon	123
47.1.1.99 fgsl_const_cgsm_texpoint	123
47.1.1.100 fgsl_const_cgsm_therm	124
47.1.1.101 fgsl_const_cgsm_thomson_cross_section	124
47.1.1.102 fgsl_const_cgsm_ton	124
47.1.1.103 fgsl_const_cgsm_torr	124
47.1.1.104 fgsl_const_cgsm_troy_ounce	124
47.1.1.105 fgsl_const_cgsm_uk_gallon	124
47.1.1.106 fgsl_const_cgsm_uk_ton	124
47.1.1.107 fgsl_const_cgsm_unified_atomic_mass	125
47.1.1.108 fgsl_const_cgsm_us_gallon	125
47.1.1.109 fgsl_const_cgsm_week	125
47.1.1.110 fgsl_const_cgsm_yard	125
47.1.1.111 fgsl_const_mkasa_acre	125
47.1.1.112 fgsl_const_mkasa_angstrom	125
47.1.1.113 fgsl_const_mkasa_astronomical_unit	125
47.1.1.114 fgsl_const_mkasa_bar	126
47.1.1.115 fgsl_const_mkasa_barn	126
47.1.1.116 fgsl_const_mkasa_bohr_magneton	126
47.1.1.117 fgsl_const_mkasa_bohr_radius	126
47.1.1.118 fgsl_const_mkasa_boltzmann	126
47.1.1.119 fgsl_const_mkasa_btu	126
47.1.1.120 fgsl_const_mkasa_calorie	126
47.1.1.121 fgsl_const_mkasa_canadian_gallon	127
47.1.1.122 fgsl_const_mkasa_carat	127
47.1.1.123 fgsl_const_mkasa_cup	127
47.1.1.124 fgsl_const_mkasa_curie	127
47.1.1.125 fgsl_const_mkasa_day	127
47.1.1.126 fgsl_const_mkasa_debye	127
47.1.1.127 fgsl_const_mkasa_dyne	127
47.1.1.128 fgsl_const_mkasa_electron_charge	128
47.1.1.129 fgsl_const_mkasa_electron_magnetic_moment	128
47.1.1.130 fgsl_const_mkasa_electron_volt	128

47.1.1.131 fgsl_const_mksa_erg	128
47.1.1.132 fgsl_const_mksa_faraday	128
47.1.1.133 fgsl_const_mksa_fathom	128
47.1.1.134 fgsl_const_mksa_fluid_ounce	128
47.1.1.135 fgsl_const_mksa_foot	129
47.1.1.136 fgsl_const_mksa_footcandle	129
47.1.1.137 fgsl_const_mksa_footlambert	129
47.1.1.138 fgsl_const_mksa_gauss	129
47.1.1.139 fgsl_const_mksa_gram_force	129
47.1.1.140 fgsl_const_mksa_grav_accel	129
47.1.1.141 fgsl_const_mksa_gravitational_constant	129
47.1.1.142 fgsl_const_mksa_hectare	130
47.1.1.143 fgsl_const_mksa_horsepower	130
47.1.1.144 fgsl_const_mksa_hour	130
47.1.1.145 fgsl_const_mksa_inch	130
47.1.1.146 fgsl_const_mksa_inch_of_mercury	130
47.1.1.147 fgsl_const_mksa_inch_of_water	130
47.1.1.148 fgsl_const_mksa_joule	130
47.1.1.149 fgsl_const_mksa_kilometers_per_hour	131
47.1.1.150 fgsl_const_mksa_kilopound_force	131
47.1.1.151 fgsl_const_mksa_knot	131
47.1.1.152 fgsl_const_mksa_lambert	131
47.1.1.153 fgsl_const_mksa_light_year	131
47.1.1.154 fgsl_const_mksa_liter	131
47.1.1.155 fgsl_const_mksa_lumen	131
47.1.1.156 fgsl_const_mksa_lux	132
47.1.1.157 fgsl_const_mksa_mass_electron	132
47.1.1.158 fgsl_const_mksa_mass_muon	132
47.1.1.159 fgsl_const_mksa_mass_neutron	132
47.1.1.160 fgsl_const_mksa_mass_proton	132
47.1.1.161 fgsl_const_mksa_meter_of_mercury	132
47.1.1.162 fgsl_const_mksa_metric_ton	132
47.1.1.163 fgsl_const_mksa_micron	133
47.1.1.164 fgsl_const_mksa_mil	133
47.1.1.165 fgsl_const_mksa_mile	133
47.1.1.166 fgsl_const_mksa_miles_per_hour	133
47.1.1.167 fgsl_const_mksa_minute	133
47.1.1.168 fgsl_const_mksa_molar_gas	133
47.1.1.169 fgsl_const_mksa_nautical_mile	133
47.1.1.170 fgsl_const_mksa_newton	134
47.1.1.171 fgsl_const_mksa_nuclear_magneton	134
47.1.1.172 fgsl_const_mksa_ounce_mass	134

47.1.1.173 fgsl_const_mksa_parsec	134
47.1.1.174 fgsl_const_mksa_phot	134
47.1.1.175 fgsl_const_mksa_pint	134
47.1.1.176 fgsl_const_mksa_plancks_constant_h	134
47.1.1.177 fgsl_const_mksa_plancks_constant_hbar	135
47.1.1.178 fgsl_const_mksa_point	135
47.1.1.179 fgsl_const_mksa_poise	135
47.1.1.180 fgsl_const_mksa_pound_force	135
47.1.1.181 fgsl_const_mksa_pound_mass	135
47.1.1.182 fgsl_const_mksa_poundal	135
47.1.1.183 fgsl_const_mksa_proton_magnetic_moment	135
47.1.1.184 fgsl_const_mksa_psi	136
47.1.1.185 fgsl_const_mksa_quart	136
47.1.1.186 fgsl_const_mksa_rad	136
47.1.1.187 fgsl_const_mksa_roentgen	136
47.1.1.188 fgsl_const_mksa_rydberg	136
47.1.1.189 fgsl_const_mksa_solar_mass	136
47.1.1.190 fgsl_const_mksa_speed_of_light	136
47.1.1.191 fgsl_const_mksa_standard_gas_volume	137
47.1.1.192 fgsl_const_mksa_std_atmosphere	137
47.1.1.193 fgsl_const_mksa_stefan_boltzmann_constant	137
47.1.1.194 fgsl_const_mksa_stilb	137
47.1.1.195 fgsl_const_mksa_stokes	137
47.1.1.196 fgsl_const_mksa_tablespoon	137
47.1.1.197 fgsl_const_mksa_tespoon	137
47.1.1.198 fgsl_const_mksa_texpoint	138
47.1.1.199 fgsl_const_mksa_therm	138
47.1.1.200 fgsl_const_mksa_thomson_cross_section	138
47.1.1.201 fgsl_const_mksa_ton	138
47.1.1.202 fgsl_const_mksa_torr	138
47.1.1.203 fgsl_const_mksa_troy_ounce	138
47.1.1.204 fgsl_const_mksa_uk_gallon	138
47.1.1.205 fgsl_const_mksa_uk_ton	139
47.1.1.206 fgsl_const_mksa_unified_atomic_mass	139
47.1.1.207 fgsl_const_mksa_us_gallon	139
47.1.1.208 fgsl_const_mksa_vacuum_permeability	139
47.1.1.209 fgsl_const_mksa_vacuum_permittivity	139
47.1.1.210 fgsl_const_mksa_week	139
47.1.1.211 fgsl_const_mksa_yard	139
47.1.1.212 fgsl_const_num_atto	140
47.1.1.213 fgsl_const_num_avogadro	140
47.1.1.214 fgsl_const_num_exa	140

47.1.1.215 fgsl_const_num_femto	140
47.1.1.216 fgsl_const_num_fine_structure	140
47.1.1.217 fgsl_const_num_giga	140
47.1.1.218 fgsl_const_num_kilo	140
47.1.1.219 fgsl_const_num_mega	141
47.1.1.220 fgsl_const_num_micro	141
47.1.1.221 fgsl_const_num_milli	141
47.1.1.222 fgsl_const_num_nano	141
47.1.1.223 fgsl_const_num_peta	141
47.1.1.224 fgsl_const_num_pico	141
47.1.1.225 fgsl_const_num_tera	141
47.1.1.226 fgsl_const_num_yocto	141
47.1.1.227 fgsl_const_num_yotta	142
47.1.1.228 fgsl_const_num_zepto	142
47.1.1.229 fgsl_const_num_zetta	142
47.1.1.230 fgsl_continue	142
47.1.1.231 fgsl_double	142
47.1.1.232 fgsl_double_complex	142
47.1.1.233 fgsl_ebadfunc	142
47.1.1.234 fgsl_ebadlen	142
47.1.1.235 fgsl_ebadtol	143
47.1.1.236 fgsl_ecache	143
47.1.1.237 fgsl_ediverge	143
47.1.1.238 fgsl_edom	143
47.1.1.239 fgsl_efactor	143
47.1.1.240 fgsl_efault	143
47.1.1.241 fgsl_eigen_sort_abs_asc	143
47.1.1.242 fgsl_eigen_sort_abs_desc	143
47.1.1.243 fgsl_eigen_sort_val_asc	144
47.1.1.244 fgsl_eigen_sort_val_desc	144
47.1.1.245 fgsl_einval	144
47.1.1.246 fgsl_ellos	144
47.1.1.247 fgsl_emaxiter	144
47.1.1.248 fgsl_enomem	144
47.1.1.249 fgsl_enoproj	144
47.1.1.250 fgsl_enoproj	144
47.1.1.251 fgsl_enotsqr	145
47.1.1.252 fgsl_eof	145
47.1.1.253 fgsl_eovrflw	145
47.1.1.254 fgsl_erange	145
47.1.1.255 fgsl_eround	145
47.1.1.256 fgsl_erunaway	145

47.1.1.257 fgsl_esanity	145
47.1.1.258 fgsl_esing	145
47.1.1.259 fgsl_etable	146
47.1.1.260 fgsl_etol	146
47.1.1.261 fgsl_etolf	146
47.1.1.262 fgsl_etolg	146
47.1.1.263 fgsl_etolx	146
47.1.1.264 fgsl_eundrflw	146
47.1.1.265 fgsl_eunimpl	146
47.1.1.266 fgsl_eunsup	146
47.1.1.267 fgsl_extended	147
47.1.1.268 fgsl_ezerodiv	147
47.1.1.269 fgsl_failure	147
47.1.1.270 fgsl_filter_end_padvalue	147
47.1.1.271 fgsl_filter_end_padzero	147
47.1.1.272 fgsl_filter_end_truncate	147
47.1.1.273 fgsl_filter_scale_iqr	147
47.1.1.274 fgsl_filter_scale_mad	148
47.1.1.275 fgsl_filter_scale_qn	148
47.1.1.276 fgsl_filter_scale_sn	148
47.1.1.277 fgsl_float	148
47.1.1.278 fgsl_gslbase	148
47.1.1.279 fgsl_int	148
47.1.1.280 fgsl_integ_cosine	148
47.1.1.281 fgsl_integ_gauss15	148
47.1.1.282 fgsl_integ_gauss21	149
47.1.1.283 fgsl_integ_gauss31	149
47.1.1.284 fgsl_integ_gauss41	149
47.1.1.285 fgsl_integ_gauss51	149
47.1.1.286 fgsl_integ_gauss61	149
47.1.1.287 fgsl_integ_sine	149
47.1.1.288 fgsl_integration_fixed_chebyshev	149
47.1.1.289 fgsl_integration_fixed_chebyshev2	149
47.1.1.290 fgsl_integration_fixed_exponential	150
47.1.1.291 fgsl_integration_fixed_gegenbauer	150
47.1.1.292 fgsl_integration_fixed_hermite	150
47.1.1.293 fgsl_integration_fixed_jacobi	150
47.1.1.294 fgsl_integration_fixed_laguerre	150
47.1.1.295 fgsl_integration_fixed_legendre	150
47.1.1.296 fgsl_integration_fixed_rational	150
47.1.1.297 fgsl_interp2d_bicubic	150
47.1.1.298 fgsl_interp2d_bilinear	151

47.1.1.299 fgsl_interp_akima	151
47.1.1.300 fgsl_interp_akima_periodic	151
47.1.1.301 fgsl_interp_cspline	151
47.1.1.302 fgsl_interp_cspline_periodic	151
47.1.1.303 fgsl_interp_linear	151
47.1.1.304 fgsl_interp_polynomial	151
47.1.1.305 fgsl_interp_steffen	151
47.1.1.306 fgsl_long	152
47.1.1.307 fgsl_min_fminimizer_brent	152
47.1.1.308 fgsl_min_fminimizer_goldensection	152
47.1.1.309 fgsl_min_fminimizer_quad_golden	152
47.1.1.310 fgsl_movstat_end_padvalue	152
47.1.1.311 fgsl_movstat_end_padzero	152
47.1.1.312 fgsl_movstat_end_truncate	152
47.1.1.313 fgsl_multifit_fdfsolver_lmder	153
47.1.1.314 fgsl_multifit_fdfsolver_lmniel	153
47.1.1.315 fgsl_multifit_fdfsolver_lmsder	153
47.1.1.316 fgsl_multifit_nlinear_ctrdiff	153
47.1.1.317 fgsl_multifit_nlinear_fwddiff	153
47.1.1.318 fgsl_multifit_nlinear_scale_levenberg	153
47.1.1.319 fgsl_multifit_nlinear_scale_marquardt	153
47.1.1.320 fgsl_multifit_nlinear_scale_more	154
47.1.1.321 fgsl_multifit_nlinear_solver_cholesky	154
47.1.1.322 fgsl_multifit_nlinear_solver_qr	154
47.1.1.323 fgsl_multifit_nlinear_solver_svd	154
47.1.1.324 fgsl_multifit_nlinear_trs_ddogleg	154
47.1.1.325 fgsl_multifit_nlinear_trs_dogleg	154
47.1.1.326 fgsl_multifit_nlinear_trs_lm	154
47.1.1.327 fgsl_multifit_nlinear_trs_lmaccel	155
47.1.1.328 fgsl_multifit_nlinear_trs_subspace2d	155
47.1.1.329 fgsl_multifit_robust_bisquare	155
47.1.1.330 fgsl_multifit_robust_cauchy	155
47.1.1.331 fgsl_multifit_robust_default	155
47.1.1.332 fgsl_multifit_robust_fair	155
47.1.1.333 fgsl_multifit_robust_huber	155
47.1.1.334 fgsl_multifit_robust_ols	156
47.1.1.335 fgsl_multifit_robust_welsch	156
47.1.1.336 fgsl_multilarge_linear_normal	156
47.1.1.337 fgsl_multilarge_linear_tsqr	156
47.1.1.338 fgsl_multilarge_nlinear_scale_levenberg	156
47.1.1.339 fgsl_multilarge_nlinear_scale_marquardt	156
47.1.1.340 fgsl_multilarge_nlinear_scale_more	156

47.1.1.341 fgsl_multilarge_nlinear_solver_cholesky	157
47.1.1.342 fgsl_multilarge_nlinear_trs_cgst	157
47.1.1.343 fgsl_multilarge_nlinear_trs_ddogleg	157
47.1.1.344 fgsl_multilarge_nlinear_trs_dogleg	157
47.1.1.345 fgsl_multilarge_nlinear_trs_lm	157
47.1.1.346 fgsl_multilarge_nlinear_trs_lmaccel	157
47.1.1.347 fgsl_multilarge_nlinear_trs_subspace2d	157
47.1.1.348 fgsl_multimin_fdfminimizer_conjugate_fr	158
47.1.1.349 fgsl_multimin_fdfminimizer_conjugate_pr	158
47.1.1.350 fgsl_multimin_fdfminimizer_steepest_descent	158
47.1.1.351 fgsl_multimin_fdfminimizer_vector_bfgs	158
47.1.1.352 fgsl_multimin_fdfminimizer_vector_bfgs2	158
47.1.1.353 fgsl_multimin_fminimizer_nmsimplex	158
47.1.1.354 fgsl_multimin_fminimizer_nmsimplex2	158
47.1.1.355 fgsl_multimin_fminimizer_nmsimplex2rand	159
47.1.1.356 fgsl_multiroot_fdfsolver_gnewton	159
47.1.1.357 fgsl_multiroot_fdfsolver_hybridj	159
47.1.1.358 fgsl_multiroot_fdfsolver_hybridjs	159
47.1.1.359 fgsl_multiroot_fdfsolver_newton	159
47.1.1.360 fgsl_multiroot_fsolver_broyden	159
47.1.1.361 fgsl_multiroot_fsolver_dnewton	159
47.1.1.362 fgsl_multiroot_fsolver_hybrid	160
47.1.1.363 fgsl_multiroot_fsolver_hybrids	160
47.1.1.364 fgsl_odeiv2_step_bsimp	160
47.1.1.365 fgsl_odeiv2_step_msadams	160
47.1.1.366 fgsl_odeiv2_step_msbdf	160
47.1.1.367 fgsl_odeiv2_step_rk1imp	160
47.1.1.368 fgsl_odeiv2_step_rk2	160
47.1.1.369 fgsl_odeiv2_step_rk2imp	161
47.1.1.370 fgsl_odeiv2_step_rk4	161
47.1.1.371 fgsl_odeiv2_step_rk4imp	161
47.1.1.372 fgsl_odeiv2_step_rk8pd	161
47.1.1.373 fgsl_odeiv2_step_rkck	161
47.1.1.374 fgsl_odeiv2_step_rkf45	161
47.1.1.375 fgsl_odeiv_hadj_dec	161
47.1.1.376 fgsl_odeiv_hadj_inc	161
47.1.1.377 fgsl_odeiv_hadj_nil	162
47.1.1.378 fgsl_odeiv_step_bsimp	162
47.1.1.379 fgsl_odeiv_step_gear1	162
47.1.1.380 fgsl_odeiv_step_gear2	162
47.1.1.381 fgsl_odeiv_step_rk2	162
47.1.1.382 fgsl_odeiv_step_rk2imp	162

47.1.1.383 fgsl_odeiv_step_rk2simp	162
47.1.1.384 fgsl_odeiv_step_rk4	162
47.1.1.385 fgsl_odeiv_step_rk4imp	163
47.1.1.386 fgsl_odeiv_step_rk8pd	163
47.1.1.387 fgsl_odeiv_step_rkck	163
47.1.1.388 fgsl_odeiv_step_rkf45	163
47.1.1.389 fgsl_pathmax	163
47.1.1.390 fgsl_prec_approx	163
47.1.1.391 fgsl_prec_double	163
47.1.1.392 fgsl_prec_single	163
47.1.1.393 fgsl_qrng_haltan	164
47.1.1.394 fgsl_qrng_niederreiter_2	164
47.1.1.395 fgsl_qrng_reversehaltan	164
47.1.1.396 fgsl_qrng_sobol	164
47.1.1.397 fgsl_rng_borosh13	164
47.1.1.398 fgsl_rng_cmrg	164
47.1.1.399 fgsl_rng_coveyou	164
47.1.1.400 fgsl_rng_default	164
47.1.1.401 fgsl_rng_default_seed	165
47.1.1.402 fgsl_rng_fishman18	165
47.1.1.403 fgsl_rng_fishman20	165
47.1.1.404 fgsl_rng_fishman2x	165
47.1.1.405 fgsl_rng_gfsr4	165
47.1.1.406 fgsl_rng_knuthran	165
47.1.1.407 fgsl_rng_knuthran2	165
47.1.1.408 fgsl_rng_knuthran2002	165
47.1.1.409 fgsl_rng_lecuyer21	166
47.1.1.410 fgsl_rng_minstd	166
47.1.1.411 fgsl_rng_mrg	166
47.1.1.412 fgsl_rng_mt19937	166
47.1.1.413 fgsl_rng_mt19937_1998	166
47.1.1.414 fgsl_rng_mt19937_1999	166
47.1.1.415 fgsl_rng_r250	166
47.1.1.416 fgsl_rng_ran0	166
47.1.1.417 fgsl_rng_ran1	167
47.1.1.418 fgsl_rng_ran2	167
47.1.1.419 fgsl_rng_ran3	167
47.1.1.420 fgsl_rng_rand	167
47.1.1.421 fgsl_rng_rand48	167
47.1.1.422 fgsl_rng_random128_bsd	167
47.1.1.423 fgsl_rng_random128_glibc2	167
47.1.1.424 fgsl_rng_random128_libc5	167

47.1.1.425 fgsl_rng_random256_bsd	168
47.1.1.426 fgsl_rng_random256_glibc2	168
47.1.1.427 fgsl_rng_random256_libc5	168
47.1.1.428 fgsl_rng_random32_bsd	168
47.1.1.429 fgsl_rng_random32_glibc2	168
47.1.1.430 fgsl_rng_random32_libc5	168
47.1.1.431 fgsl_rng_random64_bsd	168
47.1.1.432 fgsl_rng_random64_glibc2	168
47.1.1.433 fgsl_rng_random64_libc5	169
47.1.1.434 fgsl_rng_random8_bsd	169
47.1.1.435 fgsl_rng_random8_glibc2	169
47.1.1.436 fgsl_rng_random8_libc5	169
47.1.1.437 fgsl_rng_random_bsd	169
47.1.1.438 fgsl_rng_random_glibc2	169
47.1.1.439 fgsl_rng_random_libc5	169
47.1.1.440 fgsl_rng_randu	169
47.1.1.441 fgsl_rng_ranf	170
47.1.1.442 fgsl_rng_ranlux	170
47.1.1.443 fgsl_rng_ranlux389	170
47.1.1.444 fgsl_rng_ranlxd1	170
47.1.1.445 fgsl_rng_ranlxd2	170
47.1.1.446 fgsl_rng_ranlxs0	170
47.1.1.447 fgsl_rng_ranlxs1	170
47.1.1.448 fgsl_rng_ranlxs2	170
47.1.1.449 fgsl_rng_ranmar	171
47.1.1.450 fgsl_rng_slatec	171
47.1.1.451 fgsl_rng_taus	171
47.1.1.452 fgsl_rng_taus113	171
47.1.1.453 fgsl_rng_taus2	171
47.1.1.454 fgsl_rng_transputer	171
47.1.1.455 fgsl_rng_tt800	171
47.1.1.456 fgsl_rng_uni	171
47.1.1.457 fgsl_rng_uni32	172
47.1.1.458 fgsl_rng_vax	172
47.1.1.459 fgsl_rng_waterman14	172
47.1.1.460 fgsl_rng_zuf	172
47.1.1.461 fgsl_root_fdfsolver_newton	172
47.1.1.462 fgsl_root_fdfsolver_secant	172
47.1.1.463 fgsl_root_fdfsolver_steffenson	172
47.1.1.464 fgsl_root_fsolver_bisection	172
47.1.1.465 fgsl_root_fsolver_brent	173
47.1.1.466 fgsl_root_fsolver_falsepos	173

47.1.1.467 fgsl_sf_legendre_full	173
47.1.1.468 fgsl_sf_legendre_none	173
47.1.1.469 fgsl_sf_legendre_schmidt	173
47.1.1.470 fgsl_sf_legendre_spharm	173
47.1.1.471 fgsl_size_t	173
47.1.1.472 fgsl_splinalg_itersolve_gmres	173
47.1.1.473 fgsl_spmatrix_ccs	174
47.1.1.474 fgsl_spmatrix_crs	174
47.1.1.475 fgsl_spmatrix_triplet	174
47.1.1.476 fgsl_spmatrix_type_coo	174
47.1.1.477 fgsl_spmatrix_type_csc	174
47.1.1.478 fgsl_spmatrix_type_csr	174
47.1.1.479 fgsl_strmax	174
47.1.1.480 fgsl_success	174
47.1.1.481 fgsl_vegas_mode_importance	175
47.1.1.482 fgsl_vegas_mode_importance_only	175
47.1.1.483 fgsl_vegas_mode_stratified	175
47.1.1.484 fgsl_version	175
47.1.1.485 fgsl_wavelet_bspline	175
47.1.1.486 fgsl_wavelet_bspline_centered	175
47.1.1.487 fgsl_wavelet_daubechies	175
47.1.1.488 fgsl_wavelet_daubechies_centered	175
47.1.1.489 fgsl_wavelet_haar	176
47.1.1.490 fgsl_wavelet_haar_centered	176
47.1.1.491 gsl_sf_legendre_full	176
47.1.1.492 gsl_sf_legendre_none	176
47.1.1.493 gsl_sf_legendre_schmidt	176
47.1.1.494 gsl_sf_legendre_spharm	176
47.1.1.495 m_1_pi	176
47.1.1.496 m_2_pi	177
47.1.1.497 m_2_sqrtpi	177
47.1.1.498 m_e	177
47.1.1.499 m_euler	177
47.1.1.500 m_ln10	177
47.1.1.501 m_ln2	177
47.1.1.502 m_lmpi	177
47.1.1.503 m_log10e	178
47.1.1.504 m_log2e	178
47.1.1.505 m_pi	178
47.1.1.506 m_pi_2	178
47.1.1.507 m_pi_4	178
47.1.1.508 m_sqrt1_2	178

47.1.1.509 m_sqrt2	178
47.1.1.510 m_sqrt3	179
47.1.1.511 m_sqrtpi	179
48 Data Type Documentation	181
48.1 assignment(=) Interface Reference	181
48.1.1 Member Function/Subroutine Documentation	181
48.1.1.1 complex_to_fgsl_complex()	181
48.1.1.2 fgsl_complex_to_complex()	181
48.1.1.3 fgsl_matrix_complex_to_array()	181
48.1.1.4 fgsl_matrix_to_array()	182
48.1.1.5 fgsl_vector_complex_to_array()	182
48.1.1.6 fgsl_vector_to_array()	182
48.1.1.7 gsl_sf_to_fgsl_sf()	182
48.1.1.8 gsl_sfe10_to_fgsl_sfe10()	182
48.2 fgsl::fgsl_bspline_workspace Type Reference	182
48.2.1 Member Data Documentation	182
48.2.1.1 gsl_bspline_workspace	183
48.3 fgsl::fgsl_cheb_series Type Reference	183
48.3.1 Member Data Documentation	183
48.3.1.1 gsl_cheb_series	183
48.4 fgsl::fgsl_combination Type Reference	183
48.4.1 Member Data Documentation	183
48.4.1.1 gsl_combination	183
48.5 fgsl::fgsl_dht Type Reference	184
48.5.1 Member Data Documentation	184
48.5.1.1 gsl_dht	184
48.6 fgsl::fgsl_eigen_gen_workspace Type Reference	184
48.6.1 Member Data Documentation	184
48.6.1.1 gsl_eigen_gen_workspace	184
48.7 fgsl::fgsl_eigen_genherm_workspace Type Reference	184
48.7.1 Member Data Documentation	185
48.7.1.1 gsl_eigen_genherm_workspace	185
48.8 fgsl::fgsl_eigen_genhermv_workspace Type Reference	185
48.8.1 Member Data Documentation	185
48.8.1.1 gsl_eigen_genhermv_workspace	185
48.9 fgsl::fgsl_eigen_gensymm_workspace Type Reference	185
48.9.1 Member Data Documentation	185
48.9.1.1 gsl_eigen_gensymm_workspace	186
48.10 fgsl::fgsl_eigen_gensymmv_workspace Type Reference	186
48.10.1 Member Data Documentation	186
48.10.1.1 gsl_eigen_gensymmv_workspace	186

48.11 fgsl::fgsl_eigen_genv_workspace Type Reference	186
48.11.1 Member Data Documentation	186
48.11.1.1 gsl_eigen_genv_workspace	186
48.12 fgsl::fgsl_eigen_herm_workspace Type Reference	187
48.12.1 Member Data Documentation	187
48.12.1.1 gsl_eigen_herm_workspace	187
48.13 fgsl::fgsl_eigen_hermv_workspace Type Reference	187
48.13.1 Member Data Documentation	187
48.13.1.1 gsl_eigen_hermv_workspace	187
48.14 fgsl::fgsl_eigen_nonsymm_workspace Type Reference	187
48.14.1 Member Data Documentation	188
48.14.1.1 gsl_eigen_nonsymm_workspace	188
48.15 fgsl::fgsl_eigen_nonsymmv_workspace Type Reference	188
48.15.1 Member Data Documentation	188
48.15.1.1 gsl_eigen_nonsymmv_workspace	188
48.16 fgsl::fgsl_eigen_symm_workspace Type Reference	188
48.16.1 Member Data Documentation	188
48.16.1.1 gsl_eigen_symm_workspace	189
48.17 fgsl::fgsl_eigen_symmv_workspace Type Reference	189
48.17.1 Member Data Documentation	189
48.17.1.1 gsl_eigen_symmv_workspace	189
48.18 fgsl::fgsl_error_handler_t Type Reference	189
48.18.1 Member Data Documentation	189
48.18.1.1 gsl_error_handler_t	189
48.19 fgsl::fgsl_fft_complex_wavetable Type Reference	190
48.19.1 Member Data Documentation	190
48.19.1.1 gsl_fft_complex_wavetable	190
48.20 fgsl::fgsl_fft_complex_workspace Type Reference	190
48.20.1 Member Data Documentation	190
48.20.1.1 gsl_fft_complex_workspace	190
48.21 fgsl::fgsl_fft_halfcomplex_wavetable Type Reference	190
48.21.1 Member Data Documentation	191
48.21.1.1 gsl_fft_halfcomplex_wavetable	191
48.22 fgsl::fgsl_fft_real_wavetable Type Reference	191
48.22.1 Member Data Documentation	191
48.22.1.1 gsl_fft_real_wavetable	191
48.23 fgsl::fgsl_fft_real_workspace Type Reference	191
48.23.1 Member Data Documentation	191
48.23.1.1 gsl_fft_real_workspace	192
48.24 fgsl::fgsl_file Type Reference	192
48.24.1 Member Data Documentation	192
48.24.1.1 gsl_file	192

48.25 fgsl::fgsl_filter_gaussian_workspace Type Reference	192
48.25.1 Member Data Documentation	192
48.25.1.1 gsl_filter_gaussian_workspace	192
48.26 fgsl::fgsl_filter_impulse_workspace Type Reference	193
48.26.1 Member Data Documentation	193
48.26.1.1 gsl_filter_impulse_workspace	193
48.27 fgsl::fgsl_filter_median_workspace Type Reference	193
48.27.1 Member Data Documentation	193
48.27.1.1 gsl_filter_median_workspace	193
48.28 fgsl::fgsl_filter_rmedian_workspace Type Reference	193
48.28.1 Member Data Documentation	194
48.28.1.1 gsl_filter_rmedian_workspace	194
48.29 fgsl::fgsl_function Type Reference	194
48.29.1 Member Data Documentation	194
48.29.1.1 gsl_function	194
48.30 fgsl::fgsl_function_fdf Type Reference	194
48.30.1 Member Data Documentation	194
48.30.1.1 gsl_function_fdf	195
48.31 fgsl::fgsl_histogram Type Reference	195
48.31.1 Member Data Documentation	195
48.31.1.1 gsl_histogram	195
48.32 fgsl::fgsl_histogram2d Type Reference	195
48.32.1 Member Data Documentation	195
48.32.1.1 gsl_histogram2d	195
48.33 fgsl::fgsl_histogram2d_pdf Type Reference	196
48.33.1 Member Data Documentation	196
48.33.1.1 gsl_histogram2d_pdf	196
48.34 fgsl::fgsl_histogram_pdf Type Reference	196
48.34.1 Member Data Documentation	196
48.34.1.1 gsl_histogram_pdf	196
48.35 fgsl_ieee_fprintf Interface Reference	196
48.35.1 Member Function/Subroutine Documentation	197
48.35.1.1 fgsl_ieee_fprintf_double()	197
48.35.1.2 fgsl_ieee_fprintf_float()	197
48.36 fgsl_ieee_printf Interface Reference	197
48.36.1 Member Function/Subroutine Documentation	197
48.36.1.1 fgsl_ieee_printf_double()	197
48.36.1.2 fgsl_ieee_printf_float()	197
48.37 fgsl::fgsl_integration_cquad_workspace Type Reference	198
48.37.1 Member Data Documentation	198
48.37.1.1 gsl_integration_cquad_workspace	198
48.38 fgsl::fgsl_integration_fixed_workspace Type Reference	198

48.38.1 Member Data Documentation	198
48.38.1.1 <code>gsl_integration_fixed_workspace</code>	198
48.39 <code>fgsl::fgsl_integration_glfixed_table</code> Type Reference	198
48.39.1 Member Data Documentation	199
48.39.1.1 <code>gsl_integration_glfixed_table</code>	199
48.40 <code>fgsl::fgsl_integration_qawo_table</code> Type Reference	199
48.40.1 Member Data Documentation	199
48.40.1.1 <code>gsl_integration_qawo_table</code>	199
48.41 <code>fgsl::fgsl_integration_qaws_table</code> Type Reference	199
48.41.1 Member Data Documentation	199
48.41.1.1 <code>gsl_integration_qaws_table</code>	200
48.42 <code>fgsl::fgsl_integration_romberg_workspace</code> Type Reference	200
48.42.1 Member Data Documentation	200
48.42.1.1 <code>gsl_integration_romberg_workspace</code>	200
48.43 <code>fgsl::fgsl_integration_workspace</code> Type Reference	200
48.43.1 Member Data Documentation	200
48.43.1.1 <code>gsl_integration_workspace</code>	200
48.44 <code>fgsl::fgsl_interp</code> Type Reference	201
48.44.1 Member Data Documentation	201
48.44.1.1 <code>gsl_interp</code>	201
48.45 <code>fgsl::fgsl_interp2d</code> Type Reference	201
48.45.1 Member Data Documentation	201
48.45.1.1 <code>gsl_interp2d</code>	201
48.46 <code>fgsl::fgsl_interp2d_type</code> Type Reference	201
48.46.1 Member Data Documentation	202
48.46.1.1 <code>which</code>	202
48.47 <code>fgsl::fgsl_interp_accel</code> Type Reference	202
48.47.1 Member Data Documentation	202
48.47.1.1 <code>gsl_interp_accel</code>	202
48.48 <code>fgsl::fgsl_interp_type</code> Type Reference	202
48.48.1 Member Data Documentation	202
48.48.1.1 <code>which</code>	203
48.49 <code>fgsl::fgsl_matrix</code> Type Reference	203
48.49.1 Member Data Documentation	203
48.49.1.1 <code>gsl_matrix</code>	203
48.50 <code>fgsl_matrix_align</code> Interface Reference	203
48.50.1 Constructor & Destructor Documentation	203
48.50.1.1 <code>fgsl_matrix_align()</code>	203
48.50.2 Member Function/Subroutine Documentation	204
48.50.2.1 <code>fgsl_matrix_complex_align()</code>	204
48.50.2.2 <code>fgsl_matrix_complex_pointer_align()</code>	204
48.50.2.3 <code>fgsl_matrix_pointer_align()</code>	204

48.51 fgsl::fgsl_matrix_complex Type Reference	204
48.51.1 Member Data Documentation	204
48.51.1.1 gsl_matrix_complex	204
48.52 fgsl_matrix_free Interface Reference	205
48.52.1 Constructor & Destructor Documentation	205
48.52.1.1 fgsl_matrix_free()	205
48.52.2 Member Function/Subroutine Documentation	205
48.52.2.1 fgsl_matrix_complex_free()	205
48.53 fgsl_matrix_init Interface Reference	205
48.53.1 Constructor & Destructor Documentation	205
48.53.1.1 fgsl_matrix_init()	205
48.53.2 Member Function/Subroutine Documentation	206
48.53.2.1 fgsl_matrix_complex_init()	206
48.53.2.2 fgsl_matrix_complex_init_legacy()	206
48.53.2.3 fgsl_matrix_init_legacy()	206
48.54 fgsl_matrix_to_fptr Interface Reference	206
48.54.1 Constructor & Destructor Documentation	206
48.54.1.1 fgsl_matrix_to_fptr()	206
48.54.2 Member Function/Subroutine Documentation	206
48.54.2.1 fgsl_matrix_complex_to_fptr()	207
48.55 fgsl::fgsl_min_fminimizer Type Reference	207
48.55.1 Member Data Documentation	207
48.55.1.1 gsl_min_fminimizer	207
48.56 fgsl::fgsl_min_fminimizer_type Type Reference	207
48.56.1 Member Data Documentation	207
48.56.1.1 which	207
48.57 fgsl::fgsl_mode_t Type Reference	208
48.57.1 Member Data Documentation	208
48.57.1.1 gsl_mode	208
48.58 fgsl::fgsl_monte_function Type Reference	208
48.58.1 Member Data Documentation	208
48.58.1.1 gsl_monte_function	208
48.59 fgsl::fgsl_monte_miser_state Type Reference	208
48.59.1 Member Data Documentation	209
48.59.1.1 gsl_monte_miser_state	209
48.60 fgsl::fgsl_monte_plain_state Type Reference	209
48.60.1 Member Data Documentation	209
48.60.1.1 gsl_monte_plain_state	209
48.61 fgsl::fgsl_monte_vegas_state Type Reference	209
48.61.1 Member Data Documentation	209
48.61.1.1 gsl_monte_vegas_state	210
48.62 fgsl::fgsl_movstat_function Type Reference	210

48.62.1 Detailed Description	210
48.62.2 Member Data Documentation	210
48.62.2.1 function	210
48.62.2.2 params	210
48.63 fgsl::fgsl_movstat_workspace Type Reference	210
48.63.1 Member Data Documentation	211
48.63.1.1 gsl_movstat_workspace	211
48.64 fgsl_multifit_eval_wdf Interface Reference	211
48.64.1 Member Function/Subroutine Documentation	211
48.64.1.1 fgsl_multifit_eval_wdf_nowts()	211
48.64.1.2 fgsl_multifit_eval_wdf_wts()	211
48.65 fgsl_multifit_eval_wf Interface Reference	211
48.65.1 Member Function/Subroutine Documentation	212
48.65.1.1 fgsl_multifit_eval_wf_nowts()	212
48.65.1.2 fgsl_multifit_eval_wf_wts()	212
48.66 fgsl::fgsl_multifit_fdfridge Type Reference	212
48.66.1 Member Data Documentation	212
48.66.1.1 gsl_multifit_fdfridge	212
48.67 fgsl::fgsl_multifit_fdfsolver Type Reference	212
48.67.1 Member Data Documentation	213
48.67.1.1 gsl_multifit_fdfsolver	213
48.68 fgsl_multifit_fdfsolver_dif_df Interface Reference	213
48.68.1 Member Function/Subroutine Documentation	213
48.68.1.1 fgsl_multifit_fdfsolver_dif_df_nowts()	213
48.68.1.2 fgsl_multifit_fdfsolver_dif_df_wts()	213
48.69 fgsl::fgsl_multifit_fdfsolver_type Type Reference	213
48.69.1 Member Data Documentation	214
48.69.1.1 which	214
48.70 fgsl::fgsl_multifit_fsolver Type Reference	214
48.70.1 Member Data Documentation	214
48.70.1.1 gsl_multifit_fsolver	214
48.71 fgsl::fgsl_multifit_fsolver_type Type Reference	214
48.71.1 Member Data Documentation	214
48.71.1.1 which	215
48.72 fgsl::fgsl_multifit_function Type Reference	215
48.72.1 Member Data Documentation	215
48.72.1.1 gsl_multifit_function	215
48.73 fgsl::fgsl_multifit_function_fdf Type Reference	215
48.73.1 Member Data Documentation	215
48.73.1.1 gsl_multifit_function_fdf	215
48.74 fgsl::fgsl_multifit_linear_workspace Type Reference	216
48.74.1 Member Data Documentation	216

48.74.1.1 gsl_multifit_linear_workspace	216
48.75 fgsl::fgsl_multifit_nlinear_fdf Type Reference	216
48.75.1 Member Data Documentation	216
48.75.1.1 gsl_multifit_nlinear_fdf	216
48.76 fgsl::fgsl_multifit_nlinear_parameters Type Reference	217
48.76.1 Member Data Documentation	217
48.76.1.1 gsl_multifit_nlinear_parameters	217
48.77 fgsl_multifit_nlinear_type Interface Reference	217
48.77.1 Member Function/Subroutine Documentation	217
48.77.1.1 fgsl_multifit_nlinear_setup()	218
48.78 fgsl::fgsl_multifit_nlinear_type Type Reference	218
48.78.1 Member Data Documentation	218
48.78.1.1 gsl_multifit_nlinear_type	218
48.79 fgsl::fgsl_multifit_nlinear_workspace Type Reference	218
48.79.1 Member Data Documentation	218
48.79.1.1 gsl_multifit_nlinear_workspace	218
48.80 fgsl::fgsl_multifit_robust_stats Type Reference	219
48.80.1 Member Data Documentation	219
48.80.1.1 adj_rsq	219
48.80.1.2 dof	219
48.80.1.3 numit	220
48.80.1.4 r	220
48.80.1.5 rmse	220
48.80.1.6 rsq	220
48.80.1.7 sigma	220
48.80.1.8 sigma_mad	220
48.80.1.9 sigma_ols	220
48.80.1.10 sigma_rob	220
48.80.1.11 sse	221
48.80.1.12 weights	221
48.81 fgsl::fgsl_multifit_robust_type Type Reference	221
48.81.1 Member Data Documentation	221
48.81.1.1 which	221
48.82 fgsl::fgsl_multifit_robust_workspace Type Reference	221
48.82.1 Member Data Documentation	221
48.82.1.1 gsl_multifit_robust_workspace	222
48.83 fgsl::fgsl_multilarge_linear_type Type Reference	222
48.83.1 Member Data Documentation	222
48.83.1.1 which	222
48.84 fgsl::fgsl_multilarge_linear_workspace Type Reference	222
48.84.1 Member Data Documentation	222
48.84.1.1 gsl_multilarge_linear_workspace	222

48.85 fgsl::fgsl_multilarge_nlinear_fdf Type Reference	223
48.85.1 Member Data Documentation	223
48.85.1.1 gsl_multilarge_nlinear_fdf	223
48.86 fgsl::fgsl_multilarge_nlinear_parameters Type Reference	223
48.86.1 Member Data Documentation	223
48.86.1.1 gsl_multilarge_nlinear_parameters	224
48.87 fgsl_multilarge_nlinear_type Interface Reference	224
48.87.1 Member Function/Subroutine Documentation	224
48.87.1.1 fgsl_multilarge_nlinear_setup()	224
48.88 fgsl::fgsl_multilarge_nlinear_type Type Reference	224
48.88.1 Member Data Documentation	224
48.88.1.1 gsl_multilarge_nlinear_type	224
48.89 fgsl::fgsl_multilarge_nlinear_workspace Type Reference	225
48.89.1 Member Data Documentation	225
48.89.1.1 gsl_multilarge_nlinear_workspace	225
48.90 fgsl::fgsl_multimin_fdfminimizer Type Reference	225
48.90.1 Member Data Documentation	225
48.90.1.1 gsl_multimin_fdfminimizer	225
48.91 fgsl::fgsl_multimin_fdfminimizer_type Type Reference	225
48.91.1 Member Data Documentation	226
48.91.1.1 which	226
48.92 fgsl::fgsl_multimin_fminimizer Type Reference	226
48.92.1 Member Data Documentation	226
48.92.1.1 gsl_multimin_fminimizer	226
48.93 fgsl::fgsl_multimin_fminimizer_type Type Reference	226
48.93.1 Member Data Documentation	226
48.93.1.1 which	227
48.94 fgsl::fgsl_multimin_function Type Reference	227
48.94.1 Member Data Documentation	227
48.94.1.1 gsl_multimin_function	227
48.95 fgsl::fgsl_multimin_function_fdf Type Reference	227
48.95.1 Member Data Documentation	227
48.95.1.1 gsl_multimin_function_fdf	227
48.96 fgsl::fgsl_multiroot_fdfsolver Type Reference	228
48.96.1 Member Data Documentation	228
48.96.1.1 gsl_multiroot_fdfsolver	228
48.97 fgsl::fgsl_multiroot_fdfsolver_type Type Reference	228
48.97.1 Member Data Documentation	228
48.97.1.1 which	228
48.98 fgsl::fgsl_multiroot_fsolver Type Reference	228
48.98.1 Member Data Documentation	229
48.98.1.1 gsl_multiroot_fsolver	229

48.99 fgsl::fgsl_multiroot_fsolver_type Type Reference	229
48.99.1 Member Data Documentation	229
48.99.1.1 which	229
48.100 fgsl::fgsl_multiroot_function Type Reference	229
48.100.1 Member Data Documentation	229
48.100.1.1 gsl_multiroot_function	230
48.101 fgsl::fgsl_multiroot_function_fdf Type Reference	230
48.101.1 Member Data Documentation	230
48.101.1.1 gsl_multiroot_function_fdf	230
48.102 fgsl::fgsl_multiset Type Reference	230
48.102.1 Member Data Documentation	230
48.102.1.1 gsl_multiset	230
48.103 fgsl::fgsl_nlinear_callback Interface Reference	231
48.104 fgsl::fgsl_ntuple Type Reference	231
48.104.1 Member Data Documentation	231
48.104.1.1 gsl_ntuple	231
48.105 fgsl::fgsl_ntuple_select_fn Type Reference	231
48.105.1 Member Data Documentation	231
48.105.1.1 gsl_ntuple_select_fn	231
48.106 fgsl::fgsl_ntuple_value_fn Type Reference	232
48.106.1 Member Data Documentation	232
48.106.1.1 gsl_ntuple_value_fn	232
48.107 fgsl_obj_c_ptr Interface Reference	232
48.107.1 Member Function/Subroutine Documentation	232
48.107.1.1 fgsl_matrix_c_ptr()	232
48.107.1.2 fgsl_rng_c_ptr()	232
48.107.1.3 fgsl_vector_c_ptr()	233
48.108 fgsl::fgsl_odeiv2_control Type Reference	233
48.108.1 Member Data Documentation	233
48.108.1.1 gsl_odeiv2_control	233
48.109 fgsl::fgsl_odeiv2_control_type Type Reference	233
48.109.1 Member Data Documentation	233
48.109.1.1 gsl_odeiv2_control_type	233
48.110 fgsl::fgsl_odeiv2_driver Type Reference	234
48.110.1 Member Data Documentation	234
48.110.1.1 gsl_odeiv2_driver	234
48.111 fgsl::fgsl_odeiv2_evolve Type Reference	234
48.111.1 Member Data Documentation	234
48.111.1.1 gsl_odeiv2_evolve	234
48.112 fgsl::fgsl_odeiv2_step Type Reference	234
48.112.1 Member Data Documentation	235
48.112.1.1 gsl_odeiv2_step	235

48.113 fgsl::fgsl_odeiv2_step_type Type Reference	235
48.113.1 Member Data Documentation	235
48.113.1.1 which	235
48.114 fgsl::fgsl_odeiv2_system Type Reference	235
48.114.1 Member Data Documentation	235
48.114.1.1 gsl_odeiv2_system	236
48.115 fgsl::fgsl_odeiv_control Type Reference	236
48.115.1 Member Data Documentation	236
48.115.1.1 gsl_odeiv_control	236
48.116 fgsl::fgsl_odeiv_control_type Type Reference	236
48.116.1 Member Data Documentation	236
48.116.1.1 gsl_odeiv_control_type	236
48.117 fgsl::fgsl_odeiv_evolve Type Reference	237
48.117.1 Member Data Documentation	237
48.117.1.1 gsl_odeiv_evolve	237
48.118 fgsl::fgsl_odeiv_step Type Reference	237
48.118.1 Member Data Documentation	237
48.118.1.1 gsl_odeiv_step	237
48.119 fgsl::fgsl_odeiv_step_type Type Reference	237
48.119.1 Member Data Documentation	238
48.119.1.1 which	238
48.120 fgsl::fgsl_odeiv_system Type Reference	238
48.120.1 Member Data Documentation	238
48.120.1.1 gsl_odeiv_system	238
48.121 fgsl::fgsl_permutation Type Reference	238
48.121.1 Member Data Documentation	238
48.121.1.1 gsl_permutation	239
48.122 fgsl_permute Interface Reference	239
48.122.1 Constructor & Destructor Documentation	239
48.122.1.1 fgsl_permute()	239
48.122.2 Member Function/Subroutine Documentation	239
48.122.2.1 fgsl_permute_long()	239
48.123 fgsl_permute_inverse Interface Reference	239
48.123.1 Constructor & Destructor Documentation	240
48.123.1.1 fgsl_permute_inverse()	240
48.123.2 Member Function/Subroutine Documentation	240
48.123.2.1 fgsl_permute_long_inverse()	240
48.124 fgsl::fgsl_poly_complex_workspace Type Reference	240
48.124.1 Member Data Documentation	240
48.124.1.1 gsl_poly_complex_workspace	240
48.125 fgsl::fgsl_qrng Type Reference	240
48.125.1 Member Data Documentation	241

48.125.1.1 <code>gsl_qrng</code>	241
48.126 <code>fgsl::fgsl_qrng_type</code> Type Reference	241
48.126.1 Member Data Documentation	241
48.126.1.1 <code>type</code>	241
48.127 <code>fgsl::fgsl_ran_discrete_t</code> Type Reference	241
48.127.1 Member Data Documentation	241
48.127.1.1 <code>gsl_ran_discrete_t</code>	242
48.128 <code>fgsl_ran_shuffle</code> Interface Reference	242
48.128.1 Constructor & Destructor Documentation	242
48.128.1.1 <code>fgsl_ran_shuffle()</code>	242
48.128.2 Member Function/Subroutine Documentation	242
48.128.2.1 <code>fgsl_ran_shuffle_double()</code>	242
48.128.2.2 <code>fgsl_ran_shuffle_size_t()</code>	242
48.129 <code>fgsl::fgsl_rng</code> Type Reference	243
48.129.1 Member Data Documentation	243
48.129.1.1 <code>gsl_rng</code>	243
48.130 <code>fgsl::fgsl_rng_type</code> Type Reference	243
48.130.1 Member Data Documentation	243
48.130.1.1 <code>gsl_rng_type</code>	243
48.130.1.2 <code>type</code>	243
48.131 <code>fgsl::fgsl_root_fdfsolver</code> Type Reference	244
48.131.1 Member Data Documentation	244
48.131.1.1 <code>gsl_root_fdfsolver</code>	244
48.132 <code>fgsl::fgsl_root_fdfsolver_type</code> Type Reference	244
48.132.1 Member Data Documentation	244
48.132.1.1 <code>which</code>	244
48.133 <code>fgsl::fgsl_root_fsolver</code> Type Reference	244
48.133.1 Member Data Documentation	245
48.133.1.1 <code>gsl_root_fsolver</code>	245
48.134 <code>fgsl::fgsl_root_fsolver_type</code> Type Reference	245
48.134.1 Member Data Documentation	245
48.134.1.1 <code>which</code>	245
48.135 <code>fgsl::fgsl_rstat_quantile_workspace</code> Type Reference	245
48.135.1 Member Data Documentation	245
48.135.1.1 <code>gsl_rstat_quantile_workspace</code>	246
48.136 <code>fgsl::fgsl_rstat_workspace</code> Type Reference	246
48.136.1 Member Data Documentation	246
48.136.1.1 <code>gsl_rstat_workspace</code>	246
48.137 <code>fgsl::fgsl_sf_legendre_t</code> Type Reference	246
48.137.1 Member Data Documentation	246
48.137.1.1 <code>gsl_sf_legendre_t</code>	246
48.138 <code>fgsl::fgsl_sf_mathieu_workspace</code> Type Reference	247

48.138.1 Member Data Documentation	247
48.138.1.1 gsl_sf_mathieu_workspace	247
48.139 fgsl::fgsl_sf_result Type Reference	247
48.139.1 Member Data Documentation	247
48.139.1.1 err	247
48.139.1.2 val	247
48.140 fgsl::fgsl_sf_result_e10 Type Reference	248
48.140.1 Member Data Documentation	248
48.140.1.1 e10	248
48.140.1.2 err	248
48.140.1.3 val	248
48.141 fgsl::fgsl_siman_params_t Type Reference	248
48.141.1 Member Data Documentation	249
48.141.1.1 gsl_siman_params_t	249
48.142 fgsl_sizeof Interface Reference	249
48.142.1 Member Function/Subroutine Documentation	249
48.142.1.1 fgsl_sizeof_char()	249
48.142.1.2 fgsl_sizeof_combination()	250
48.142.1.3 fgsl_sizeof_double()	250
48.142.1.4 fgsl_sizeof_float()	250
48.142.1.5 fgsl_sizeof_int()	250
48.142.1.6 fgsl_sizeof_integration_qawo_table()	250
48.142.1.7 fgsl_sizeof_integration_qaws_table()	250
48.142.1.8 fgsl_sizeof_integration_workspace()	250
48.142.1.9 fgsl_sizeof_interp()	250
48.142.1.10 fgsl_sizeof_matrix()	251
48.142.1.11 fgsl_sizeof_matrix_complex()	251
48.142.1.12 fgsl_sizeof_multiset()	251
48.142.1.13 fgsl_sizeof_permutation()	251
48.142.1.14 fgsl_sizeof_size_t()	251
48.142.1.15 fgsl_sizeof_vector()	251
48.142.1.16 fgsl_sizeof_vector_complex()	251
48.142.1.17 fgsl_sizeof_wavelet()	251
48.142.1.18 fgsl_sizeof_wavelet_workspace()	252
48.143 fgsl_sort Interface Reference	252
48.143.1 Member Function/Subroutine Documentation	252
48.143.1.1 fgsl_sort2_double()	252
48.143.1.2 fgsl_sort_double()	252
48.143.1.3 fgsl_sort_long()	252
48.143.1.4 fgsl_sort_vector()	252
48.143.1.5 fgsl_sort_vector2()	253
48.144 fgsl_sort_index Interface Reference	253

48.144.1 Member Function/Subroutine Documentation	253
48.144.1.1 fgsl_sort_double_index()	253
48.144.1.2 fgsl_sort_long_index()	253
48.144.1.3 fgsl_sort_vector_index()	253
48.145 fgsl_sort_largest Interface Reference	253
48.145.1 Member Function/Subroutine Documentation	254
48.145.1.1 fgsl_sort_double_largest()	254
48.145.1.2 fgsl_sort_long_largest()	254
48.145.1.3 fgsl_sort_vector_largest()	254
48.146 fgsl_sort_largest_index Interface Reference	254
48.146.1 Member Function/Subroutine Documentation	254
48.146.1.1 fgsl_sort_double_largest_index()	254
48.146.1.2 fgsl_sort_long_largest_index()	255
48.146.1.3 fgsl_sort_vector_largest_index()	255
48.147 fgsl_sort_smallest Interface Reference	255
48.147.1 Member Function/Subroutine Documentation	255
48.147.1.1 fgsl_sort_double_smallest()	255
48.147.1.2 fgsl_sort_long_smallest()	255
48.147.1.3 fgsl_sort_vector_smallest()	255
48.148 fgsl_sort_smallest_index Interface Reference	256
48.148.1 Member Function/Subroutine Documentation	256
48.148.1.1 fgsl_sort_double_smallest_index()	256
48.148.1.2 fgsl_sort_long_smallest_index()	256
48.148.1.3 fgsl_sort_vector_smallest_index()	256
48.149 fgsl::fgsl_splinalg_itersolve Type Reference	256
48.149.1 Member Data Documentation	256
48.149.1.1 gsl_splinalg_itersolve	257
48.150 fgsl::fgsl_splinalg_itersolve_type Type Reference	257
48.150.1 Member Data Documentation	257
48.150.1.1 which	257
48.151 fgsl::fgsl_spline Type Reference	257
48.151.1 Member Data Documentation	257
48.151.1.1 gsl_spline	257
48.152 fgsl::fgsl_spline2d Type Reference	258
48.152.1 Member Data Documentation	258
48.152.1.1 gsl_spline2d	258
48.153 fgsl::fgsl_spmatrix Type Reference	258
48.153.1 Member Data Documentation	258
48.153.1.1 gsl_spmatrix	258
48.154 fgsl::fgsl_sum_levin_u_workspace Type Reference	258
48.154.1 Member Data Documentation	259
48.154.1.1 gsl_sum_levin_u_workspace	259

48.155 fgsl::fgsl_sum_levin_ustrunc_workspace Type Reference	259
48.155.1 Member Data Documentation	259
48.155.1.1 gsl_sum_levin_ustrunc_workspace	259
48.156 fgsl::fgsl_vector Type Reference	259
48.156.1 Member Data Documentation	259
48.156.1.1 gsl_vector	260
48.157 fgsl_vector_align Interface Reference	260
48.157.1 Constructor & Destructor Documentation	260
48.157.1.1 fgsl_vector_align()	260
48.157.2 Member Function/Subroutine Documentation	260
48.157.2.1 fgsl_vector_complex_align()	260
48.157.2.2 fgsl_vector_complex_pointer_align()	260
48.157.2.3 fgsl_vector_pointer_align()	261
48.158 fgsl::fgsl_vector_complex Type Reference	261
48.158.1 Member Data Documentation	261
48.158.1.1 gsl_vector_complex	261
48.159 fgsl_vector_free Interface Reference	261
48.159.1 Constructor & Destructor Documentation	261
48.159.1.1 fgsl_vector_free()	261
48.159.2 Member Function/Subroutine Documentation	262
48.159.2.1 fgsl_vector_complex_free()	262
48.159.2.2 fgsl_vector_int_free()	262
48.160 fgsl_vector_init Interface Reference	262
48.160.1 Constructor & Destructor Documentation	262
48.160.1.1 fgsl_vector_init()	262
48.160.2 Member Function/Subroutine Documentation	262
48.160.2.1 fgsl_vector_complex_init()	262
48.160.2.2 fgsl_vector_complex_init_legacy()	263
48.160.2.3 fgsl_vector_init_legacy()	263
48.160.2.4 fgsl_vector_int_init()	263
48.161 fgsl::fgsl_vector_int Type Reference	263
48.161.1 Member Data Documentation	263
48.161.1.1 gsl_vector_int	263
48.162 fgsl_vector_to_fptr Interface Reference	263
48.162.1 Constructor & Destructor Documentation	264
48.162.1.1 fgsl_vector_to_fptr()	264
48.162.2 Member Function/Subroutine Documentation	264
48.162.2.1 fgsl_vector_complex_to_fptr()	264
48.162.2.2 fgsl_vector_int_to_fptr()	264
48.163 fgsl::fgsl_wavelet Type Reference	264
48.163.1 Member Data Documentation	264
48.163.1.1 gsl_wavelet	264

48.164 fgsl::fgsl_wavelet_type Type Reference	265
48.164.1 Member Data Documentation	265
48.164.1.1 which	265
48.165 fgsl::fgsl_wavelet_workspace Type Reference	265
48.165.1 Member Data Documentation	265
48.165.1.1 gsl_wavelet_workspace	265
48.166 fgsl_well_defined Interface Reference	266
48.166.1 Member Function/Subroutine Documentation	267
48.166.1.1 fgsl_cheb_series_status()	267
48.166.1.2 fgsl_combination_status()	267
48.166.1.3 fgsl_dht_status()	267
48.166.1.4 fgsl_error_handler_status()	267
48.166.1.5 fgsl_file_status()	267
48.166.1.6 fgsl_histogram_status()	267
48.166.1.7 fgsl_integration_cquad_workspace_status()	268
48.166.1.8 fgsl_integration_glfixed_table_status()	268
48.166.1.9 fgsl_integration_qawo_table_status()	268
48.166.1.10 fgsl_integration_qaws_table_status()	268
48.166.1.11 fgsl_integration_workspace_status()	268
48.166.1.12 fgsl_interp2d_status()	268
48.166.1.13 fgsl_interp_accel_status()	268
48.166.1.14 fgsl_interp_status()	268
48.166.1.15 fgsl_matrix_complex_status()	269
48.166.1.16 fgsl_matrix_status()	269
48.166.1.17 fgsl_min_fminimizer_status()	269
48.166.1.18 fgsl_monte_function_status()	269
48.166.1.19 fgsl_monte_miser_status()	269
48.166.1.20 fgsl_monte_plain_status()	269
48.166.1.21 fgsl_monte_vegas_status()	269
48.166.1.22 fgsl_multifit_fdsolver_status()	269
48.166.1.23 fgsl_multifit_fsolver_status()	270
48.166.1.24 fgsl_multifit_nlinear_status()	270
48.166.1.25 fgsl_multifit_status()	270
48.166.1.26 fgsl_multimin_fdfminimizer_status()	270
48.166.1.27 fgsl_multimin_fminimizer_status()	270
48.166.1.28 fgsl_multiroot_fdsolver_status()	270
48.166.1.29 fgsl_multiroot_fsolver_status()	270
48.166.1.30 fgsl_multiset_status()	270
48.166.1.31 fgsl_ntuple_select_fn_status()	271
48.166.1.32 fgsl_ntuple_status()	271
48.166.1.33 fgsl_ntuple_value_fn_status()	271
48.166.1.34 fgsl_odeiv2_control_status()	271

48.166.1.35 fgsl_odeiv2_driver_status()	271
48.166.1.36 fgsl_odeiv2_evolve_status()	271
48.166.1.37 fgsl_odeiv2_step_status()	271
48.166.1.38 fgsl_odeiv2_system_status()	271
48.166.1.39 fgsl_odeiv_control_status()	272
48.166.1.40 fgsl_odeiv_evolve_status()	272
48.166.1.41 fgsl_odeiv_step_status()	272
48.166.1.42 fgsl_odeiv_system_status()	272
48.166.1.43 fgsl_permutation_status()	272
48.166.1.44 fgsl_poly_complex_workspace_stat()	272
48.166.1.45 fgsl_qrng_status()	272
48.166.1.46 fgsl_ran_discrete_t_status()	272
48.166.1.47 fgsl_rng_status()	273
48.166.1.48 fgsl_root_fdfsolver_status()	273
48.166.1.49 fgsl_root_fsolver_status()	273
48.166.1.50 fgsl_siman_params_t_status()	273
48.166.1.51 fgsl_spline2d_status()	273
48.166.1.52 fgsl_spline_status()	273
48.166.1.53 fgsl_vector_complex_status()	273
48.166.1.54 fgsl_vector_int_status()	273
48.166.1.55 fgsl_vector_status()	274
48.166.1.56 fgsl_wavelet_status()	274
48.166.1.57 fgsl_wavelet_workspace_status()	274
48.167 fgsl::gsl_complex Type Reference	274
48.167.1 Member Data Documentation	274
48.167.1.1 dat	274
48.168 fgsl::gsl_sf_result Type Reference	274
48.168.1 Member Data Documentation	275
48.168.1.1 err	275
48.168.1.2 val	275
48.169 fgsl::gsl_sf_result_e10 Type Reference	275
48.169.1 Member Data Documentation	275
48.169.1.1 e10	275
48.169.1.2 err	275
48.169.1.3 val	275
49 File Documentation	277
49.1 api/array.finc File Reference	277
49.1.1 Function/Subroutine Documentation	279
49.1.1.1 fgsl_matrix_align()	280
49.1.1.2 fgsl_matrix_c_ptr()	280
49.1.1.3 fgsl_matrix_complex_align()	280

49.1.1.4 fgsl_matrix_complex_c_ptr()	281
49.1.1.5 fgsl_matrix_complex_free()	281
49.1.1.6 fgsl_matrix_complex_init()	281
49.1.1.7 fgsl_matrix_complex_init_legacy()	282
49.1.1.8 fgsl_matrix_complex_pointer_align()	282
49.1.1.9 fgsl_matrix_complex_status()	282
49.1.1.10 fgsl_matrix_complex_to_array()	283
49.1.1.11 fgsl_matrix_complex_to_fptr()	283
49.1.1.12 fgsl_matrix_free()	283
49.1.1.13 fgsl_matrix_get_size1()	283
49.1.1.14 fgsl_matrix_get_size2()	283
49.1.1.15 fgsl_matrix_get_tda()	283
49.1.1.16 fgsl_matrix_init()	283
49.1.1.17 fgsl_matrix_init_legacy()	284
49.1.1.18 fgsl_matrix_pointer_align()	284
49.1.1.19 fgsl_matrix_status()	285
49.1.1.20 fgsl_matrix_to_array()	285
49.1.1.21 fgsl_matrix_to_fptr()	285
49.1.1.22 fgsl_sizeof_matrix()	285
49.1.1.23 fgsl_sizeof_matrix_complex()	286
49.1.1.24 fgsl_sizeof_vector()	286
49.1.1.25 fgsl_sizeof_vector_complex()	286
49.1.1.26 fgsl_vector_align()	286
49.1.1.27 fgsl_vector_c_ptr()	287
49.1.1.28 fgsl_vector_complex_align()	287
49.1.1.29 fgsl_vector_complex_c_ptr()	287
49.1.1.30 fgsl_vector_complex_free()	288
49.1.1.31 fgsl_vector_complex_init()	288
49.1.1.32 fgsl_vector_complex_init_legacy()	288
49.1.1.33 fgsl_vector_complex_pointer_align()	288
49.1.1.34 fgsl_vector_complex_status()	289
49.1.1.35 fgsl_vector_complex_to_array()	289
49.1.1.36 fgsl_vector_complex_to_fptr()	289
49.1.1.37 fgsl_vector_free()	289
49.1.1.38 fgsl_vector_get_size()	289
49.1.1.39 fgsl_vector_get_stride()	290
49.1.1.40 fgsl_vector_init()	290
49.1.1.41 fgsl_vector_init_legacy()	290
49.1.1.42 fgsl_vector_int_free()	290
49.1.1.43 fgsl_vector_int_init()	291
49.1.1.44 fgsl_vector_int_status()	291
49.1.1.45 fgsl_vector_int_to_fptr()	291

49.1.1.46 fgsl_vector_pointer_align()	291
49.1.1.47 fgsl_vector_status()	292
49.1.1.48 fgsl_vector_to_array()	292
49.1.1.49 fgsl_vector_to_fptr()	292
49.2 interface/array.finc File Reference	292
49.2.1 Function/Subroutine Documentation	293
49.2.1.1 fgsl_aux_matrix_complex_align()	293
49.2.1.2 fgsl_aux_matrix_complex_free()	294
49.2.1.3 fgsl_aux_matrix_complex_init()	294
49.2.1.4 fgsl_aux_matrix_complex_size()	294
49.2.1.5 fgsl_aux_matrix_double_align()	294
49.2.1.6 fgsl_aux_matrix_double_free()	294
49.2.1.7 fgsl_aux_matrix_double_init()	294
49.2.1.8 fgsl_aux_matrix_double_size()	295
49.2.1.9 fgsl_aux_vector_complex_align()	295
49.2.1.10 fgsl_aux_vector_complex_free()	295
49.2.1.11 fgsl_aux_vector_complex_init()	295
49.2.1.12 fgsl_aux_vector_complex_size()	295
49.2.1.13 fgsl_aux_vector_complex_stride()	295
49.2.1.14 fgsl_aux_vector_double_align()	296
49.2.1.15 fgsl_aux_vector_double_free()	296
49.2.1.16 fgsl_aux_vector_double_init()	296
49.2.1.17 fgsl_aux_vector_double_size()	296
49.2.1.18 fgsl_aux_vector_double_stride()	296
49.2.1.19 fgsl_aux_vector_int_align()	296
49.2.1.20 fgsl_aux_vector_int_free()	297
49.2.1.21 fgsl_aux_vector_int_init()	297
49.2.1.22 fgsl_aux_vector_int_size()	297
49.2.1.23 fgsl_aux_vector_int_stride()	297
49.2.1.24 gsl_aux_sizeof_matrix()	297
49.2.1.25 gsl_aux_sizeof_matrix_complex()	297
49.2.1.26 gsl_aux_sizeof_vector()	297
49.2.1.27 gsl_aux_sizeof_vector_complex()	298
49.2.1.28 gsl_matrix_complex_get()	298
49.2.1.29 gsl_matrix_complex_ptr()	298
49.2.1.30 gsl_matrix_get()	298
49.2.1.31 gsl_matrix_ptr()	298
49.2.1.32 gsl_vector_complex_get()	298
49.2.1.33 gsl_vector_complex_ptr()	299
49.2.1.34 gsl_vector_get()	299
49.2.1.35 gsl_vector_int_ptr()	299
49.2.1.36 gsl_vector_ptr()	299

49.3 api/bspline.finc File Reference	299
49.3.1 Function/Subroutine Documentation	300
49.3.1.1 fgsl_bspline_alloc()	300
49.3.1.2 fgsl_bspline_deriv_eval()	300
49.3.1.3 fgsl_bspline_deriv_eval_nonzero()	300
49.3.1.4 fgsl_bspline_eval()	300
49.3.1.5 fgsl_bspline_eval_nonzero()	300
49.3.1.6 fgsl_bspline_free()	301
49.3.1.7 fgsl_bspline_greville_abscissa()	301
49.3.1.8 fgsl_bspline_knots()	301
49.3.1.9 fgsl_bspline_knots_greville()	301
49.3.1.10 fgsl_bspline_knots_uniform()	301
49.3.1.11 fgsl_bspline_ncoeffs()	301
49.4 interface/bspline.finc File Reference	302
49.4.1 Function/Subroutine Documentation	302
49.4.1.1 gsl_bspline_alloc()	302
49.4.1.2 gsl_bspline_deriv_eval()	302
49.4.1.3 gsl_bspline_deriv_eval_nonzero()	303
49.4.1.4 gsl_bspline_eval()	303
49.4.1.5 gsl_bspline_eval_nonzero()	303
49.4.1.6 gsl_bspline_free()	303
49.4.1.7 gsl_bspline_greville_abscissa()	303
49.4.1.8 gsl_bspline_knots()	304
49.4.1.9 gsl_bspline_knots_greville()	304
49.4.1.10 gsl_bspline_knots_uniform()	304
49.4.1.11 gsl_bspline_ncoeffs()	304
49.5 api/chebyshev.finc File Reference	304
49.5.1 Function/Subroutine Documentation	305
49.5.1.1 fgsl_cheb_alloc()	305
49.5.1.2 fgsl_cheb_calc_deriv()	305
49.5.1.3 fgsl_cheb_calc_integ()	305
49.5.1.4 fgsl_cheb_coeffs()	305
49.5.1.5 fgsl_cheb_eval()	305
49.5.1.6 fgsl_cheb_eval_err()	305
49.5.1.7 fgsl_cheb_eval_n()	306
49.5.1.8 fgsl_cheb_eval_n_err()	306
49.5.1.9 fgsl_cheb_free()	306
49.5.1.10 fgsl_cheb_init()	306
49.5.1.11 fgsl_cheb_order()	306
49.5.1.12 fgsl_cheb_series_status()	306
49.5.1.13 fgsl_cheb_size()	307
49.6 interface/chebyshev.finc File Reference	307

49.6.1 Function/Subroutine Documentation	307
49.6.1.1 gsl_cheb_alloc()	307
49.6.1.2 gsl_cheb_calc_deriv()	308
49.6.1.3 gsl_cheb_calc_integ()	308
49.6.1.4 gsl_cheb_coeffs()	308
49.6.1.5 gsl_cheb_eval()	308
49.6.1.6 gsl_cheb_eval_err()	308
49.6.1.7 gsl_cheb_eval_n()	308
49.6.1.8 gsl_cheb_eval_n_err()	309
49.6.1.9 gsl_cheb_free()	309
49.6.1.10 gsl_cheb_init()	309
49.6.1.11 gsl_cheb_order()	309
49.6.1.12 gsl_cheb_size()	309
49.7 api/complex.finc File Reference	310
49.7.1 Function/Subroutine Documentation	310
49.7.1.1 complex_to_fgsl_complex()	311
49.7.1.2 fgsl_complex_arccos()	311
49.7.1.3 fgsl_complex_arccos_real()	311
49.7.1.4 fgsl_complex_arccosh()	311
49.7.1.5 fgsl_complex_arccosh_real()	311
49.7.1.6 fgsl_complex_arccot()	311
49.7.1.7 fgsl_complex_arccoth()	311
49.7.1.8 fgsl_complex_arccsc()	312
49.7.1.9 fgsl_complex_arccsc_real()	312
49.7.1.10 fgsl_complex_arccsch()	312
49.7.1.11 fgsl_complex_arcsec()	312
49.7.1.12 fgsl_complex_arcsec_real()	312
49.7.1.13 fgsl_complex_arcsech()	312
49.7.1.14 fgsl_complex_arcsin()	312
49.7.1.15 fgsl_complex_arcsin_real()	313
49.7.1.16 fgsl_complex_arcsinh()	313
49.7.1.17 fgsl_complex_arctan()	313
49.7.1.18 fgsl_complex_arctanh()	313
49.7.1.19 fgsl_complex_arctanh_real()	313
49.7.1.20 fgsl_complex_arg()	313
49.7.1.21 fgsl_complex_log10()	313
49.7.1.22 fgsl_complex_log_b()	314
49.7.1.23 fgsl_complex_logabs()	314
49.7.1.24 fgsl_complex_to_complex()	314
49.8 interface/complex.finc File Reference	314
49.8.1 Function/Subroutine Documentation	315
49.8.1.1 fgsl_complex_arccos()	315

49.8.1.2 gsl_complex_arccos_real()	315
49.8.1.3 gsl_complex_arccosh()	315
49.8.1.4 gsl_complex_arccosh_real()	315
49.8.1.5 gsl_complex_arccot()	316
49.8.1.6 gsl_complex_arccoth()	316
49.8.1.7 gsl_complex_arccsc()	316
49.8.1.8 gsl_complex_arccsc_real()	316
49.8.1.9 gsl_complex_arccsch()	316
49.8.1.10 gsl_complex_arcsec()	316
49.8.1.11 gsl_complex_arcsec_real()	316
49.8.1.12 gsl_complex_arcsech()	317
49.8.1.13 gsl_complex_arcsin()	317
49.8.1.14 gsl_complex_arcsin_real()	317
49.8.1.15 gsl_complex_arcsinh()	317
49.8.1.16 gsl_complex_arctan()	317
49.8.1.17 gsl_complex_arctanh()	317
49.8.1.18 gsl_complex_arctanh_real()	317
49.8.1.19 gsl_complex_arg()	318
49.8.1.20 gsl_complex_log10()	318
49.8.1.21 gsl_complex_log_b()	318
49.8.1.22 gsl_complex_logabs()	318
49.9 api/deriv.finc File Reference	318
49.9.1 Function/Subroutine Documentation	318
49.9.1.1 fgsl_deriv_backward()	318
49.9.1.2 fgsl_deriv_central()	319
49.9.1.3 fgsl_deriv_forward()	319
49.10 interface/deriv.finc File Reference	319
49.10.1 Function/Subroutine Documentation	319
49.10.1.1 gsl_deriv_backward()	320
49.10.1.2 gsl_deriv_central()	320
49.10.1.3 gsl_deriv_forward()	320
49.11 api/dht.finc File Reference	320
49.11.1 Function/Subroutine Documentation	320
49.11.1.1 fgsl_dht_alloc()	321
49.11.1.2 fgsl_dht_apply()	321
49.11.1.3 fgsl_dht_free()	321
49.11.1.4 fgsl_dht_init()	321
49.11.1.5 fgsl_dht_k_sample()	321
49.11.1.6 fgsl_dht_new()	321
49.11.1.7 fgsl_dht_status()	322
49.11.1.8 fgsl_dht_x_sample()	322
49.12 interface/dht.finc File Reference	322

49.12.1 Function/Subroutine Documentation	322
49.12.1.1 gsl_dht_alloc()	323
49.12.1.2 gsl_dht_apply()	323
49.12.1.3 gsl_dht_free()	323
49.12.1.4 gsl_dht_init()	323
49.12.1.5 gsl_dht_k_sample()	323
49.12.1.6 gsl_dht_new()	323
49.12.1.7 gsl_dht_x_sample()	324
49.13 api/eigen.finc File Reference	324
49.13.1 Function/Subroutine Documentation	325
49.13.1.1 fgsl_eigen_gen()	325
49.13.1.2 fgsl_eigen_gen_alloc()	325
49.13.1.3 fgsl_eigen_gen_free()	325
49.13.1.4 fgsl_eigen_gen_params()	325
49.13.1.5 fgsl_eigen_gen_qz()	326
49.13.1.6 fgsl_eigen_genherm()	326
49.13.1.7 fgsl_eigen_genherm_alloc()	326
49.13.1.8 fgsl_eigen_genherm_free()	326
49.13.1.9 fgsl_eigen_genhermv()	326
49.13.1.10 fgsl_eigen_genhermv_alloc()	327
49.13.1.11 fgsl_eigen_genhermv_free()	327
49.13.1.12 fgsl_eigen_genhermv_sort()	327
49.13.1.13 fgsl_eigen_gensymm()	327
49.13.1.14 fgsl_eigen_gensymm_alloc()	327
49.13.1.15 fgsl_eigen_gensymm_free()	327
49.13.1.16 fgsl_eigen_gensymmv()	328
49.13.1.17 fgsl_eigen_gensymmv_alloc()	328
49.13.1.18 fgsl_eigen_gensymmv_free()	328
49.13.1.19 fgsl_eigen_gensymmv_sort()	328
49.13.1.20 fgsl_eigen_genv()	328
49.13.1.21 fgsl_eigen_genv_alloc()	328
49.13.1.22 fgsl_eigen_genv_free()	329
49.13.1.23 fgsl_eigen_genv_qz()	329
49.13.1.24 fgsl_eigen_genv_sort()	329
49.13.1.25 fgsl_eigen_herm()	329
49.13.1.26 fgsl_eigen_herm_alloc()	329
49.13.1.27 fgsl_eigen_herm_free()	330
49.13.1.28 fgsl_eigen_hermv()	330
49.13.1.29 fgsl_eigen_hermv_alloc()	330
49.13.1.30 fgsl_eigen_hermv_free()	330
49.13.1.31 fgsl_eigen_hermv_sort()	330
49.13.1.32 fgsl_eigen_nonsymm()	330

49.13.1.33 fgsl_eigen_nonsymm_alloc()	331
49.13.1.34 fgsl_eigen_nonsymm_free()	331
49.13.1.35 fgsl_eigen_nonsymm_params()	331
49.13.1.36 fgsl_eigen_nonsymm_z()	331
49.13.1.37 fgsl_eigen_nonsymmv()	331
49.13.1.38 fgsl_eigen_nonsymmv_alloc()	331
49.13.1.39 fgsl_eigen_nonsymmv_free()	332
49.13.1.40 fgsl_eigen_nonsymmv_params()	332
49.13.1.41 fgsl_eigen_nonsymmv_sort()	332
49.13.1.42 fgsl_eigen_nonsymmv_z()	332
49.13.1.43 fgsl_eigen_symm()	332
49.13.1.44 fgsl_eigen_symm_alloc()	332
49.13.1.45 fgsl_eigen_symm_free()	333
49.13.1.46 fgsl_eigen_symmv()	333
49.13.1.47 fgsl_eigen_symmv_alloc()	333
49.13.1.48 fgsl_eigen_symmv_free()	333
49.13.1.49 fgsl_eigen_symmv_sort()	333
49.14 interface/eigen.finc File Reference	333
49.14.1 Function/Subroutine Documentation	334
49.14.1.1 gsl_eigen_gen()	335
49.14.1.2 gsl_eigen_gen_alloc()	335
49.14.1.3 gsl_eigen_gen_free()	335
49.14.1.4 gsl_eigen_gen_params()	335
49.14.1.5 gsl_eigen_gen_qz()	335
49.14.1.6 gsl_eigen_genherm()	336
49.14.1.7 gsl_eigen_genherm_alloc()	336
49.14.1.8 gsl_eigen_genherm_free()	336
49.14.1.9 gsl_eigen_genhermv()	336
49.14.1.10 gsl_eigen_genhermv_alloc()	336
49.14.1.11 gsl_eigen_genhermv_free()	336
49.14.1.12 gsl_eigen_genhermv_sort()	337
49.14.1.13 gsl_eigen_gensymm()	337
49.14.1.14 gsl_eigen_gensymm_alloc()	337
49.14.1.15 gsl_eigen_gensymm_free()	337
49.14.1.16 gsl_eigen_gensymmv()	337
49.14.1.17 gsl_eigen_gensymmv_alloc()	337
49.14.1.18 gsl_eigen_gensymmv_free()	338
49.14.1.19 gsl_eigen_gensymmv_sort()	338
49.14.1.20 gsl_eigen_genv()	338
49.14.1.21 gsl_eigen_genv_alloc()	338
49.14.1.22 gsl_eigen_genv_free()	338
49.14.1.23 gsl_eigen_genv_qz()	338

49.14.1.24	gsl_eigen_genv_sort()	339
49.14.1.25	gsl_eigen_herm()	339
49.14.1.26	gsl_eigen_herm_alloc()	339
49.14.1.27	gsl_eigen_herm_free()	339
49.14.1.28	gsl_eigen_hermv()	339
49.14.1.29	gsl_eigen_hermv_alloc()	339
49.14.1.30	gsl_eigen_hermv_free()	340
49.14.1.31	gsl_eigen_hermv_sort()	340
49.14.1.32	gsl_eigen_nonsymm()	340
49.14.1.33	gsl_eigen_nonsymm_alloc()	340
49.14.1.34	gsl_eigen_nonsymm_free()	340
49.14.1.35	gsl_eigen_nonsymm_params()	340
49.14.1.36	gsl_eigen_nonsymm_z()	341
49.14.1.37	gsl_eigen_nonsymmv()	341
49.14.1.38	gsl_eigen_nonsymmv_alloc()	341
49.14.1.39	gsl_eigen_nonsymmv_free()	341
49.14.1.40	gsl_eigen_nonsymmv_params()	341
49.14.1.41	gsl_eigen_nonsymmv_sort()	341
49.14.1.42	gsl_eigen_nonsymmv_z()	342
49.14.1.43	gsl_eigen_symm()	342
49.14.1.44	gsl_eigen_symm_alloc()	342
49.14.1.45	gsl_eigen_symm_free()	342
49.14.1.46	gsl_eigen_symmv()	342
49.14.1.47	gsl_eigen_symmv_alloc()	342
49.14.1.48	gsl_eigen_symmv_free()	343
49.14.1.49	gsl_eigen_symmv_sort()	343
49.15	api/error.finc File Reference	343
49.15.1	Function/Subroutine Documentation	343
49.15.1.1	fgsl_error()	344
49.15.1.2	fgsl_error_handler_init()	344
49.15.1.3	fgsl_error_handler_status()	344
49.15.1.4	fgsl_set_error_handler()	344
49.15.1.5	fgsl_set_error_handler_off()	344
49.15.1.6	fgsl_strerror()	344
49.16	interface/error.finc File Reference	345
49.16.1	Function/Subroutine Documentation	345
49.16.1.1	gsl_error()	345
49.16.1.2	gsl_set_error_handler()	345
49.16.1.3	gsl_set_error_handler_off()	346
49.16.1.4	gsl_strerror()	346
49.17	api/fft.finc File Reference	346
49.17.1	Function/Subroutine Documentation	346

49.17.1.1 fgsl_fft_complex_backward()	347
49.17.1.2 fgsl_fft_complex_forward()	347
49.17.1.3 fgsl_fft_complex_inverse()	347
49.17.1.4 fgsl_fft_complex_radix2_backward()	347
49.17.1.5 fgsl_fft_complex_radix2_dif_backward()	347
49.17.1.6 fgsl_fft_complex_radix2_dif_forward()	348
49.17.1.7 fgsl_fft_complex_radix2_dif_inverse()	348
49.17.1.8 fgsl_fft_complex_radix2_dif_transform()	348
49.17.1.9 fgsl_fft_complex_radix2_forward()	348
49.17.1.10 fgsl_fft_complex_radix2_inverse()	348
49.17.1.11 fgsl_fft_complex_radix2_transform()	349
49.17.1.12 fgsl_fft_complex_transform()	349
49.17.1.13 fgsl_fft_complex_wavetable_alloc()	349
49.17.1.14 fgsl_fft_complex_wavetable_free()	349
49.17.1.15 fgsl_fft_complex_workspace_alloc()	349
49.17.1.16 fgsl_fft_complex_workspace_free()	349
49.17.1.17 fgsl_fft_halfcomplex_radix2_backward()	350
49.17.1.18 fgsl_fft_halfcomplex_radix2_inverse()	350
49.17.1.19 fgsl_fft_halfcomplex_transform()	350
49.17.1.20 fgsl_fft_halfcomplex_unpack()	350
49.17.1.21 fgsl_fft_halfcomplex_wavetable_alloc()	350
49.17.1.22 fgsl_fft_halfcomplex_wavetable_free()	350
49.17.1.23 fgsl_fft_real_radix2_transform()	351
49.17.1.24 fgsl_fft_real_transform()	351
49.17.1.25 fgsl_fft_real_unpack()	351
49.17.1.26 fgsl_fft_real_wavetable_alloc()	351
49.17.1.27 fgsl_fft_real_wavetable_free()	351
49.17.1.28 fgsl_fft_real_workspace_alloc()	351
49.17.1.29 fgsl_fft_real_workspace_free()	352
49.18 interface/fft.finc File Reference	352
49.18.1 Function/Subroutine Documentation	353
49.18.1.1 gsl_fft_complex_backward()	353
49.18.1.2 gsl_fft_complex_forward()	353
49.18.1.3 gsl_fft_complex_inverse()	353
49.18.1.4 gsl_fft_complex_radix2_backward()	353
49.18.1.5 gsl_fft_complex_radix2_dif_backward()	354
49.18.1.6 gsl_fft_complex_radix2_dif_forward()	354
49.18.1.7 gsl_fft_complex_radix2_dif_inverse()	354
49.18.1.8 gsl_fft_complex_radix2_dif_transform()	354
49.18.1.9 gsl_fft_complex_radix2_forward()	354
49.18.1.10 gsl_fft_complex_radix2_inverse()	355
49.18.1.11 gsl_fft_complex_radix2_transform()	355

49.18.1.12	gsl_fft_complex_transform()	355
49.18.1.13	gsl_fft_complex_wavetable_alloc()	355
49.18.1.14	gsl_fft_complex_wavetable_free()	355
49.18.1.15	gsl_fft_complex_workspace_alloc()	355
49.18.1.16	gsl_fft_complex_workspace_free()	356
49.18.1.17	gsl_fft_halfcomplex_radix2_backward()	356
49.18.1.18	gsl_fft_halfcomplex_radix2_inverse()	356
49.18.1.19	gsl_fft_halfcomplex_transform()	356
49.18.1.20	gsl_fft_halfcomplex_unpack()	356
49.18.1.21	gsl_fft_halfcomplex_wavetable_alloc()	356
49.18.1.22	gsl_fft_halfcomplex_wavetable_free()	357
49.18.1.23	gsl_fft_real_radix2_transform()	357
49.18.1.24	gsl_fft_real_transform()	357
49.18.1.25	gsl_fft_real_unpack()	357
49.18.1.26	gsl_fft_real_wavetable_alloc()	357
49.18.1.27	gsl_fft_real_wavetable_free()	357
49.18.1.28	gsl_fft_real_workspace_alloc()	358
49.18.1.29	gsl_fft_real_workspace_free()	358
49.19	api/filter.finc File Reference	358
49.19.1	Function/Subroutine Documentation	358
49.19.1.1	fgsl_filter_gaussian()	358
49.19.1.2	fgsl_filter_gaussian_alloc()	359
49.19.1.3	fgsl_filter_gaussian_free()	359
49.19.1.4	fgsl_filter_gaussian_kernel()	359
49.19.1.5	fgsl_filter_impulse()	359
49.19.1.6	fgsl_filter_impulse_alloc()	359
49.19.1.7	fgsl_filter_impulse_free()	360
49.19.1.8	fgsl_filter_median()	360
49.19.1.9	fgsl_filter_median_alloc()	360
49.19.1.10	fgsl_filter_median_free()	360
49.19.1.11	fgsl_filter_rmedian()	360
49.19.1.12	fgsl_filter_rmedian_alloc()	360
49.19.1.13	fgsl_filter_rmedian_free()	361
49.20	interface/filter.finc File Reference	361
49.20.1	Function/Subroutine Documentation	361
49.20.1.1	gsl_filter_gaussian()	361
49.20.1.2	gsl_filter_gaussian_alloc()	362
49.20.1.3	gsl_filter_gaussian_free()	362
49.20.1.4	gsl_filter_gaussian_kernel()	362
49.20.1.5	gsl_filter_impulse()	362
49.20.1.6	gsl_filter_impulse_alloc()	362
49.20.1.7	gsl_filter_impulse_free()	363

49.20.1.8	gsl_filter_median()	363
49.20.1.9	gsl_filter_median_alloc()	363
49.20.1.10	gsl_filter_median_free()	363
49.20.1.11	gsl_filter_rmedian()	363
49.20.1.12	gsl_filter_rmedian_alloc()	363
49.20.1.13	gsl_filter_rmedian_free()	364
49.21	api/fit.finc File Reference	364
49.21.1	Function/Subroutine Documentation	364
49.21.1.1	fgsl_fit_linear()	364
49.21.1.2	fgsl_fit_linear_est()	364
49.21.1.3	fgsl_fit_mul()	365
49.21.1.4	fgsl_fit_mul_est()	365
49.21.1.5	fgsl_fit_wlinear()	365
49.21.1.6	fgsl_fit_wmul()	365
49.22	interface/fit.finc File Reference	366
49.22.1	Function/Subroutine Documentation	366
49.22.1.1	gsl_fit_linear()	366
49.22.1.2	gsl_fit_linear_est()	367
49.22.1.3	gsl_fit_mul()	367
49.22.1.4	gsl_fit_mul_est()	367
49.22.1.5	gsl_fit_wlinear()	367
49.22.1.6	gsl_fit_wmul()	368
49.23	api/histogram.finc File Reference	368
49.23.1	Function/Subroutine Documentation	369
49.23.1.1	fgsl_histogram2d_accumulate()	370
49.23.1.2	fgsl_histogram2d_add()	370
49.23.1.3	fgsl_histogram2d_alloc()	370
49.23.1.4	fgsl_histogram2d_clone()	370
49.23.1.5	fgsl_histogram2d_cov()	370
49.23.1.6	fgsl_histogram2d_div()	370
49.23.1.7	fgsl_histogram2d_equal_bins_p()	371
49.23.1.8	fgsl_histogram2d_find()	371
49.23.1.9	fgsl_histogram2d_fprintf()	371
49.23.1.10	fgsl_histogram2d_fread()	371
49.23.1.11	fgsl_histogram2d_free()	371
49.23.1.12	fgsl_histogram2d_fscanf()	371
49.23.1.13	fgsl_histogram2d_fwrite()	372
49.23.1.14	fgsl_histogram2d_get()	372
49.23.1.15	fgsl_histogram2d_get_xrange()	372
49.23.1.16	fgsl_histogram2d_get_yrange()	372
49.23.1.17	fgsl_histogram2d_increment()	372
49.23.1.18	fgsl_histogram2d_max_bin()	373

49.23.1.19 fgsl_histogram2d_max_val()	373
49.23.1.20 fgsl_histogram2d_memcpy()	373
49.23.1.21 fgsl_histogram2d_min_bin()	373
49.23.1.22 fgsl_histogram2d_min_val()	373
49.23.1.23 fgsl_histogram2d_mul()	373
49.23.1.24 fgsl_histogram2d_nx()	374
49.23.1.25 fgsl_histogram2d_ny()	374
49.23.1.26 fgsl_histogram2d_pdf_alloc()	374
49.23.1.27 fgsl_histogram2d_pdf_free()	374
49.23.1.28 fgsl_histogram2d_pdf_init()	374
49.23.1.29 fgsl_histogram2d_pdf_sample()	374
49.23.1.30 fgsl_histogram2d_reset()	375
49.23.1.31 fgsl_histogram2d_scale()	375
49.23.1.32 fgsl_histogram2d_set_ranges()	375
49.23.1.33 fgsl_histogram2d_set_ranges_uniform()	375
49.23.1.34 fgsl_histogram2d_shift()	375
49.23.1.35 fgsl_histogram2d_sub()	375
49.23.1.36 fgsl_histogram2d_sum()	376
49.23.1.37 fgsl_histogram2d_xmax()	376
49.23.1.38 fgsl_histogram2d_xmean()	376
49.23.1.39 fgsl_histogram2d_xmin()	376
49.23.1.40 fgsl_histogram2d_xsigma()	376
49.23.1.41 fgsl_histogram2d_ymax()	376
49.23.1.42 fgsl_histogram2d_ymean()	376
49.23.1.43 fgsl_histogram2d_ymin()	377
49.23.1.44 fgsl_histogram2d_ysigma()	377
49.23.1.45 fgsl_histogram_accumulate()	377
49.23.1.46 fgsl_histogram_add()	377
49.23.1.47 fgsl_histogram_alloc()	377
49.23.1.48 fgsl_histogram_bins()	377
49.23.1.49 fgsl_histogram_clone()	378
49.23.1.50 fgsl_histogram_div()	378
49.23.1.51 fgsl_histogram_equal_bins_p()	378
49.23.1.52 fgsl_histogram_find()	378
49.23.1.53 fgsl_histogram_fprintf()	378
49.23.1.54 fgsl_histogram_fread()	378
49.23.1.55 fgsl_histogram_free()	379
49.23.1.56 fgsl_histogram_fscanf()	379
49.23.1.57 fgsl_histogram_fwrite()	379
49.23.1.58 fgsl_histogram_get()	379
49.23.1.59 fgsl_histogram_get_range()	379
49.23.1.60 fgsl_histogram_increment()	379

49.23.1.61 fgsl_histogram_max()	380
49.23.1.62 fgsl_histogram_max_bin()	380
49.23.1.63 fgsl_histogram_max_val()	380
49.23.1.64 fgsl_histogram_mean()	380
49.23.1.65 fgsl_histogram_memcpy()	380
49.23.1.66 fgsl_histogram_min()	380
49.23.1.67 fgsl_histogram_min_bin()	380
49.23.1.68 fgsl_histogram_min_val()	381
49.23.1.69 fgsl_histogram_mul()	381
49.23.1.70 fgsl_histogram_pdf_alloc()	381
49.23.1.71 fgsl_histogram_pdf_free()	381
49.23.1.72 fgsl_histogram_pdf_init()	381
49.23.1.73 fgsl_histogram_pdf_sample()	381
49.23.1.74 fgsl_histogram_reset()	382
49.23.1.75 fgsl_histogram_scale()	382
49.23.1.76 fgsl_histogram_set_ranges()	382
49.23.1.77 fgsl_histogram_set_ranges_uniform()	382
49.23.1.78 fgsl_histogram_shift()	382
49.23.1.79 fgsl_histogram_sigma()	382
49.23.1.80 fgsl_histogram_status()	383
49.23.1.81 fgsl_histogram_sub()	383
49.23.1.82 fgsl_histogram_sum()	383
49.24 interface/histogram.finc File Reference	383
49.24.1 Function/Subroutine Documentation	385
49.24.1.1 gsl_histogram2d_accumulate()	385
49.24.1.2 gsl_histogram2d_add()	385
49.24.1.3 gsl_histogram2d_alloc()	385
49.24.1.4 gsl_histogram2d_clone()	386
49.24.1.5 gsl_histogram2d_cov()	386
49.24.1.6 gsl_histogram2d_div()	386
49.24.1.7 gsl_histogram2d_equal_bins_p()	386
49.24.1.8 gsl_histogram2d_find()	386
49.24.1.9 gsl_histogram2d_fprintf()	386
49.24.1.10 gsl_histogram2d_fread()	387
49.24.1.11 gsl_histogram2d_free()	387
49.24.1.12 gsl_histogram2d_fscanf()	387
49.24.1.13 gsl_histogram2d_fwrite()	387
49.24.1.14 gsl_histogram2d_get()	387
49.24.1.15 gsl_histogram2d_get_xrange()	387
49.24.1.16 gsl_histogram2d_get_yrange()	388
49.24.1.17 gsl_histogram2d_increment()	388
49.24.1.18 gsl_histogram2d_max_bin()	388

49.24.1.19 gsl_histogram2d_max_val()	388
49.24.1.20 gsl_histogram2d_memcpy()	388
49.24.1.21 gsl_histogram2d_min_bin()	388
49.24.1.22 gsl_histogram2d_min_val()	389
49.24.1.23 gsl_histogram2d_mul()	389
49.24.1.24 gsl_histogram2d_nx()	389
49.24.1.25 gsl_histogram2d_ny()	389
49.24.1.26 gsl_histogram2d_pdf_alloc()	389
49.24.1.27 gsl_histogram2d_pdf_free()	389
49.24.1.28 gsl_histogram2d_pdf_init()	390
49.24.1.29 gsl_histogram2d_pdf_sample()	390
49.24.1.30 gsl_histogram2d_reset()	390
49.24.1.31 gsl_histogram2d_scale()	390
49.24.1.32 gsl_histogram2d_set_ranges()	390
49.24.1.33 gsl_histogram2d_set_ranges_uniform()	391
49.24.1.34 gsl_histogram2d_shift()	391
49.24.1.35 gsl_histogram2d_sub()	391
49.24.1.36 gsl_histogram2d_sum()	391
49.24.1.37 gsl_histogram2d_xmax()	391
49.24.1.38 gsl_histogram2d_xmean()	391
49.24.1.39 gsl_histogram2d_xmin()	392
49.24.1.40 gsl_histogram2d_xsigma()	392
49.24.1.41 gsl_histogram2d_ymax()	392
49.24.1.42 gsl_histogram2d_ymean()	392
49.24.1.43 gsl_histogram2d_ymin()	392
49.24.1.44 gsl_histogram2d_ysigma()	392
49.24.1.45 gsl_histogram_accumulate()	392
49.24.1.46 gsl_histogram_add()	393
49.24.1.47 gsl_histogram_alloc()	393
49.24.1.48 gsl_histogram_bins()	393
49.24.1.49 gsl_histogram_clone()	393
49.24.1.50 gsl_histogram_div()	393
49.24.1.51 gsl_histogram_equal_bins_p()	393
49.24.1.52 gsl_histogram_find()	394
49.24.1.53 gsl_histogram_fprintf()	394
49.24.1.54 gsl_histogram_fread()	394
49.24.1.55 gsl_histogram_free()	394
49.24.1.56 gsl_histogram_fscanf()	394
49.24.1.57 gsl_histogram_fwrite()	394
49.24.1.58 gsl_histogram_get()	395
49.24.1.59 gsl_histogram_get_range()	395
49.24.1.60 gsl_histogram_increment()	395

49.24.1.61	gsl_histogram_max()	395
49.24.1.62	gsl_histogram_max_bin()	395
49.24.1.63	gsl_histogram_max_val()	395
49.24.1.64	gsl_histogram_mean()	396
49.24.1.65	gsl_histogram_memcpy()	396
49.24.1.66	gsl_histogram_min()	396
49.24.1.67	gsl_histogram_min_bin()	396
49.24.1.68	gsl_histogram_min_val()	396
49.24.1.69	gsl_histogram_mul()	396
49.24.1.70	gsl_histogram_pdf_alloc()	396
49.24.1.71	gsl_histogram_pdf_free()	397
49.24.1.72	gsl_histogram_pdf_init()	397
49.24.1.73	gsl_histogram_pdf_sample()	397
49.24.1.74	gsl_histogram_reset()	397
49.24.1.75	gsl_histogram_scale()	397
49.24.1.76	gsl_histogram_set_ranges()	397
49.24.1.77	gsl_histogram_set_ranges_uniform()	398
49.24.1.78	gsl_histogram_shift()	398
49.24.1.79	gsl_histogram_sigma()	398
49.24.1.80	gsl_histogram_sub()	398
49.24.1.81	gsl_histogram_sum()	398
49.25	api/ieee.finc File Reference	398
49.25.1	Function/Subroutine Documentation	399
49.25.1.1	fgsl_ieee_env_setup()	399
49.25.1.2	fgsl_ieee_fprintf_double()	399
49.25.1.3	fgsl_ieee_fprintf_float()	399
49.25.1.4	fgsl_ieee_printf_double()	399
49.25.1.5	fgsl_ieee_printf_float()	399
49.26	interface/ieee.finc File Reference	400
49.26.1	Function/Subroutine Documentation	400
49.26.1.1	gsl_ieee_env_setup()	400
49.26.1.2	gsl_ieee_fprintf_double()	400
49.26.1.3	gsl_ieee_fprintf_float()	400
49.26.1.4	gsl_ieee_printf_double()	401
49.26.1.5	gsl_ieee_printf_float()	401
49.27	api/integration.finc File Reference	401
49.27.1	Function/Subroutine Documentation	402
49.27.1.1	fgsl_integration_cquad()	402
49.27.1.2	fgsl_integration_cquad_workspace_alloc()	402
49.27.1.3	fgsl_integration_cquad_workspace_free()	402
49.27.1.4	fgsl_integration_cquad_workspace_status()	402
49.27.1.5	fgsl_integration_fixed()	403

49.27.1.6 fgsl_integration_fixed_alloc()	403
49.27.1.7 fgsl_integration_fixed_free()	403
49.27.1.8 fgsl_integration_fixed_n()	403
49.27.1.9 fgsl_integration_fixed_nodes()	403
49.27.1.10 fgsl_integration_fixed_weights()	403
49.27.1.11 fgsl_integration_glfixed()	404
49.27.1.12 fgsl_integration_glfixed_point()	404
49.27.1.13 fgsl_integration_glfixed_table_alloc()	404
49.27.1.14 fgsl_integration_glfixed_table_free()	404
49.27.1.15 fgsl_integration_glfixed_table_status()	404
49.27.1.16 fgsl_integration_qag()	405
49.27.1.17 fgsl_integration_qagi()	405
49.27.1.18 fgsl_integration_qagil()	405
49.27.1.19 fgsl_integration_qagiu()	405
49.27.1.20 fgsl_integration_qagp()	406
49.27.1.21 fgsl_integration_qags()	406
49.27.1.22 fgsl_integration_qawc()	406
49.27.1.23 fgsl_integration_qawf()	406
49.27.1.24 fgsl_integration_qawo()	407
49.27.1.25 fgsl_integration_qawo_table_alloc()	407
49.27.1.26 fgsl_integration_qawo_table_free()	407
49.27.1.27 fgsl_integration_qawo_table_set()	407
49.27.1.28 fgsl_integration_qawo_table_set_length()	407
49.27.1.29 fgsl_integration_qawo_table_status()	408
49.27.1.30 fgsl_integration_qaws()	408
49.27.1.31 fgsl_integration_qaws_table_alloc()	408
49.27.1.32 fgsl_integration_qaws_table_free()	408
49.27.1.33 fgsl_integration_qaws_table_set()	408
49.27.1.34 fgsl_integration_qaws_table_status()	409
49.27.1.35 fgsl_integration_qng()	409
49.27.1.36 fgsl_integration_romberg()	409
49.27.1.37 fgsl_integration_romberg_alloc()	409
49.27.1.38 fgsl_integration_romberg_free()	409
49.27.1.39 fgsl_integration_workspace_alloc()	410
49.27.1.40 fgsl_integration_workspace_free()	410
49.27.1.41 fgsl_integration_workspace_status()	410
49.27.1.42 fgsl_sizeof_integration_qawo_table()	410
49.27.1.43 fgsl_sizeof_integration_qaws_table()	410
49.27.1.44 fgsl_sizeof_integration_workspace()	410
49.28 interface/integration.finc File Reference	411
49.28.1 Function/Subroutine Documentation	412
49.28.1.1 gsl_aux_integration_fixed_alloc()	412

49.28.1.2	gsl_aux_sizeof_integration_qawo_table()	412
49.28.1.3	gsl_aux_sizeof_integration_qaws_table()	412
49.28.1.4	gsl_aux_sizeof_integration_workspace()	412
49.28.1.5	gsl_integration_cquad()	413
49.28.1.6	gsl_integration_cquad_workspace_alloc()	413
49.28.1.7	gsl_integration_cquad_workspace_free()	413
49.28.1.8	gsl_integration_fixed()	413
49.28.1.9	gsl_integration_fixed_free()	413
49.28.1.10	gsl_integration_fixed_n()	413
49.28.1.11	gsl_integration_fixed_nodes()	414
49.28.1.12	gsl_integration_fixed_weights()	414
49.28.1.13	gsl_integration_glfixed()	414
49.28.1.14	gsl_integration_glfixed_point()	414
49.28.1.15	gsl_integration_glfixed_table_alloc()	414
49.28.1.16	gsl_integration_glfixed_table_free()	414
49.28.1.17	gsl_integration_qag()	415
49.28.1.18	gsl_integration_qagi()	415
49.28.1.19	gsl_integration_qagil()	415
49.28.1.20	gsl_integration_qagiu()	415
49.28.1.21	gsl_integration_qagp()	416
49.28.1.22	gsl_integration_qags()	416
49.28.1.23	gsl_integration_qawc()	416
49.28.1.24	gsl_integration_qawf()	417
49.28.1.25	gsl_integration_qawo()	417
49.28.1.26	gsl_integration_qawo_table_alloc()	417
49.28.1.27	gsl_integration_qawo_table_free()	417
49.28.1.28	gsl_integration_qawo_table_set()	418
49.28.1.29	gsl_integration_qawo_table_set_length()	418
49.28.1.30	gsl_integration_qaws()	418
49.28.1.31	gsl_integration_qaws_table_alloc()	418
49.28.1.32	gsl_integration_qaws_table_free()	418
49.28.1.33	gsl_integration_qaws_table_set()	419
49.28.1.34	gsl_integration_qng()	419
49.28.1.35	gsl_integration_romberg()	419
49.28.1.36	gsl_integration_romberg_alloc()	419
49.28.1.37	gsl_integration_romberg_free()	419
49.28.1.38	gsl_integration_workspace_alloc()	420
49.28.1.39	gsl_integration_workspace_free()	420
49.29	api/interp.finc File Reference	420
49.29.1	Function/Subroutine Documentation	421
49.29.1.1	fgsl_interp2d_alloc()	422
49.29.1.2	fgsl_interp2d_eval()	422

49.29.1.3 fgsl_interp2d_eval_deriv_x()	422
49.29.1.4 fgsl_interp2d_eval_deriv_x_e()	422
49.29.1.5 fgsl_interp2d_eval_deriv_xx()	423
49.29.1.6 fgsl_interp2d_eval_deriv_xx_e()	423
49.29.1.7 fgsl_interp2d_eval_deriv_xy()	423
49.29.1.8 fgsl_interp2d_eval_deriv_xy_e()	423
49.29.1.9 fgsl_interp2d_eval_deriv_y()	424
49.29.1.10 fgsl_interp2d_eval_deriv_y_e()	424
49.29.1.11 fgsl_interp2d_eval_deriv_yy()	424
49.29.1.12 fgsl_interp2d_eval_deriv_yy_e()	424
49.29.1.13 fgsl_interp2d_eval_e()	425
49.29.1.14 fgsl_interp2d_eval_e_extrap()	425
49.29.1.15 fgsl_interp2d_eval_extrap()	425
49.29.1.16 fgsl_interp2d_eval_extrap_e()	425
49.29.1.17 fgsl_interp2d_free()	426
49.29.1.18 fgsl_interp2d_init()	426
49.29.1.19 fgsl_interp2d_min_size()	426
49.29.1.20 fgsl_interp2d_name()	426
49.29.1.21 fgsl_interp2d_status()	426
49.29.1.22 fgsl_interp2d_type_min_size()	426
49.29.1.23 fgsl_interp_accel_alloc()	427
49.29.1.24 fgsl_interp_accel_find()	427
49.29.1.25 fgsl_interp_accel_free()	427
49.29.1.26 fgsl_interp_accel_status()	427
49.29.1.27 fgsl_interp_alloc()	427
49.29.1.28 fgsl_interp_bsearch()	427
49.29.1.29 fgsl_interp_eval()	428
49.29.1.30 fgsl_interp_eval_deriv()	428
49.29.1.31 fgsl_interp_eval_deriv2()	428
49.29.1.32 fgsl_interp_eval_deriv2_e()	428
49.29.1.33 fgsl_interp_eval_deriv_e()	428
49.29.1.34 fgsl_interp_eval_e()	429
49.29.1.35 fgsl_interp_eval_integ()	429
49.29.1.36 fgsl_interp_eval_integ_e()	429
49.29.1.37 fgsl_interp_free()	429
49.29.1.38 fgsl_interp_init()	429
49.29.1.39 fgsl_interp_min_size()	430
49.29.1.40 fgsl_interp_name()	430
49.29.1.41 fgsl_interp_status()	430
49.29.1.42 fgsl_interp_type_min_size()	430
49.29.1.43 fgsl_sizeof_interp()	430
49.29.1.44 fgsl_spline2d_alloc()	430

49.29.1.45 fgsl_spline2d_eval()	431
49.29.1.46 fgsl_spline2d_eval_deriv_x()	431
49.29.1.47 fgsl_spline2d_eval_deriv_x_e()	431
49.29.1.48 fgsl_spline2d_eval_deriv_xx()	431
49.29.1.49 fgsl_spline2d_eval_deriv_xx_e()	431
49.29.1.50 fgsl_spline2d_eval_deriv_xy()	432
49.29.1.51 fgsl_spline2d_eval_deriv_xy_e()	432
49.29.1.52 fgsl_spline2d_eval_deriv_y()	432
49.29.1.53 fgsl_spline2d_eval_deriv_y_e()	432
49.29.1.54 fgsl_spline2d_eval_deriv_yy()	432
49.29.1.55 fgsl_spline2d_eval_deriv_yy_e()	433
49.29.1.56 fgsl_spline2d_eval_e()	433
49.29.1.57 fgsl_spline2d_eval_extrap()	433
49.29.1.58 fgsl_spline2d_eval_extrap_e()	433
49.29.1.59 fgsl_spline2d_free()	433
49.29.1.60 fgsl_spline2d_get()	434
49.29.1.61 fgsl_spline2d_init()	434
49.29.1.62 fgsl_spline2d_min_size()	434
49.29.1.63 fgsl_spline2d_name()	434
49.29.1.64 fgsl_spline2d_set()	434
49.29.1.65 fgsl_spline2d_status()	434
49.29.1.66 fgsl_spline_alloc()	435
49.29.1.67 fgsl_spline_eval()	435
49.29.1.68 fgsl_spline_eval_deriv()	435
49.29.1.69 fgsl_spline_eval_deriv2()	435
49.29.1.70 fgsl_spline_eval_deriv2_e()	435
49.29.1.71 fgsl_spline_eval_deriv_e()	436
49.29.1.72 fgsl_spline_eval_e()	436
49.29.1.73 fgsl_spline_eval_integ()	436
49.29.1.74 fgsl_spline_eval_integ_e()	436
49.29.1.75 fgsl_spline_free()	436
49.29.1.76 fgsl_spline_init()	437
49.29.1.77 fgsl_spline_min_size()	437
49.29.1.78 fgsl_spline_name()	437
49.29.1.79 fgsl_spline_status()	437
49.30 interface/interp.finc File Reference	437
49.30.1 Function/Subroutine Documentation	439
49.30.1.1 fgsl_aux_interp2d_alloc()	439
49.30.1.2 fgsl_aux_interp_alloc()	439
49.30.1.3 gsl_aux_sizeof_interp()	439
49.30.1.4 gsl_interp2d_alloc()	440
49.30.1.5 gsl_interp2d_eval()	440

49.30.1.6	gsl_interp2d_eval_deriv_x()	440
49.30.1.7	gsl_interp2d_eval_deriv_x_e()	440
49.30.1.8	gsl_interp2d_eval_deriv_xx()	441
49.30.1.9	gsl_interp2d_eval_deriv_xx_e()	441
49.30.1.10	gsl_interp2d_eval_deriv_xy()	441
49.30.1.11	gsl_interp2d_eval_deriv_xy_e()	441
49.30.1.12	gsl_interp2d_eval_deriv_y()	442
49.30.1.13	gsl_interp2d_eval_deriv_y_e()	442
49.30.1.14	gsl_interp2d_eval_deriv_yy()	442
49.30.1.15	gsl_interp2d_eval_deriv_yy_e()	442
49.30.1.16	gsl_interp2d_eval_e()	443
49.30.1.17	gsl_interp2d_eval_e_extrap()	443
49.30.1.18	gsl_interp2d_eval_extrap()	443
49.30.1.19	gsl_interp2d_eval_extrap_e()	443
49.30.1.20	gsl_interp2d_free()	444
49.30.1.21	gsl_interp2d_init()	444
49.30.1.22	gsl_interp2d_min_size()	444
49.30.1.23	gsl_interp2d_name()	444
49.30.1.24	gsl_interp2d_type_min_size()	444
49.30.1.25	gsl_interp_accel_alloc()	444
49.30.1.26	gsl_interp_accel_find()	445
49.30.1.27	gsl_interp_accel_free()	445
49.30.1.28	gsl_interp_alloc()	445
49.30.1.29	gsl_interp_bsearch()	445
49.30.1.30	gsl_interp_eval()	445
49.30.1.31	gsl_interp_eval_deriv()	446
49.30.1.32	gsl_interp_eval_deriv2()	446
49.30.1.33	gsl_interp_eval_deriv2_e()	446
49.30.1.34	gsl_interp_eval_deriv_e()	446
49.30.1.35	gsl_interp_eval_e()	446
49.30.1.36	gsl_interp_eval_integ()	447
49.30.1.37	gsl_interp_eval_integ_e()	447
49.30.1.38	gsl_interp_free()	447
49.30.1.39	gsl_interp_init()	447
49.30.1.40	gsl_interp_min_size()	447
49.30.1.41	gsl_interp_name()	448
49.30.1.42	gsl_interp_type_min_size()	448
49.30.1.43	gsl_spline2d_alloc()	448
49.30.1.44	gsl_spline2d_eval()	448
49.30.1.45	gsl_spline2d_eval_deriv_x()	448
49.30.1.46	gsl_spline2d_eval_deriv_x_e()	449
49.30.1.47	gsl_spline2d_eval_deriv_xx()	449

49.30.1.48	gsl_spline2d_eval_deriv_xx_e()	449
49.30.1.49	gsl_spline2d_eval_deriv_xy()	449
49.30.1.50	gsl_spline2d_eval_deriv_xy_e()	449
49.30.1.51	gsl_spline2d_eval_deriv_y()	450
49.30.1.52	gsl_spline2d_eval_deriv_y_e()	450
49.30.1.53	gsl_spline2d_eval_deriv_yy()	450
49.30.1.54	gsl_spline2d_eval_deriv_yy_e()	450
49.30.1.55	gsl_spline2d_eval_e()	450
49.30.1.56	gsl_spline2d_eval_extrap()	451
49.30.1.57	gsl_spline2d_eval_extrap_e()	451
49.30.1.58	gsl_spline2d_free()	451
49.30.1.59	gsl_spline2d_get()	451
49.30.1.60	gsl_spline2d_init()	451
49.30.1.61	gsl_spline2d_min_size()	452
49.30.1.62	gsl_spline2d_name()	452
49.30.1.63	gsl_spline2d_set()	452
49.30.1.64	gsl_spline_alloc()	452
49.30.1.65	gsl_spline_eval()	452
49.30.1.66	gsl_spline_eval_deriv()	452
49.30.1.67	gsl_spline_eval_deriv2()	453
49.30.1.68	gsl_spline_eval_deriv2_e()	453
49.30.1.69	gsl_spline_eval_deriv_e()	453
49.30.1.70	gsl_spline_eval_e()	453
49.30.1.71	gsl_spline_eval_integ()	453
49.30.1.72	gsl_spline_eval_integ_e()	454
49.30.1.73	gsl_spline_free()	454
49.30.1.74	gsl_spline_init()	454
49.30.1.75	gsl_spline_min_size()	454
49.30.1.76	gsl_spline_name()	454
49.31	api/io.finc File Reference	455
49.31.1	Function/Subroutine Documentation	455
49.31.1.1	fgsl_close()	455
49.31.1.2	fgsl_file_status()	456
49.31.1.3	fgsl_flush()	456
49.31.1.4	fgsl_open()	456
49.31.1.5	fgsl_stderr()	456
49.31.1.6	fgsl_stdin()	457
49.31.1.7	fgsl_stdout()	457
49.32	interface/io.finc File Reference	457
49.32.1	Function/Subroutine Documentation	457
49.32.1.1	fclose()	458
49.32.1.2	fflush()	458

49.32.1.3 fgsl_cstderr()	458
49.32.1.4 fgsl_cstdin()	458
49.32.1.5 fgsl_cstdout()	458
49.32.1.6 fopen()	458
49.33 api/linalg.finc File Reference	459
49.33.1 Function/Subroutine Documentation	462
49.33.1.1 fgsl_linalg_balance_matrix()	462
49.33.1.2 fgsl_linalg_bidiag_decomp()	462
49.33.1.3 fgsl_linalg_bidiag_unpack()	462
49.33.1.4 fgsl_linalg_bidiag_unpack2()	463
49.33.1.5 fgsl_linalg_bidiag_unpack_b()	463
49.33.1.6 fgsl_linalg_cholesky_band_decomp()	463
49.33.1.7 fgsl_linalg_cholesky_band_invert()	463
49.33.1.8 fgsl_linalg_cholesky_band_rcond()	463
49.33.1.9 fgsl_linalg_cholesky_band_scale()	463
49.33.1.10 fgsl_linalg_cholesky_band_scale_apply()	464
49.33.1.11 fgsl_linalg_cholesky_band_solve()	464
49.33.1.12 fgsl_linalg_cholesky_band_solve2()	464
49.33.1.13 fgsl_linalg_cholesky_band_svx()	464
49.33.1.14 fgsl_linalg_cholesky_band_svxm()	464
49.33.1.15 fgsl_linalg_cholesky_band_unpack()	464
49.33.1.16 fgsl_linalg_cholesky_decomp()	465
49.33.1.17 fgsl_linalg_cholesky_decomp1()	465
49.33.1.18 fgsl_linalg_cholesky_decomp2()	465
49.33.1.19 fgsl_linalg_cholesky_invert()	465
49.33.1.20 fgsl_linalg_cholesky_rcond()	465
49.33.1.21 fgsl_linalg_cholesky_scale()	465
49.33.1.22 fgsl_linalg_cholesky_scale_apply()	466
49.33.1.23 fgsl_linalg_cholesky_solve()	466
49.33.1.24 fgsl_linalg_cholesky_solve2()	466
49.33.1.25 fgsl_linalg_cholesky_svx()	466
49.33.1.26 fgsl_linalg_cholesky_svx2()	466
49.33.1.27 fgsl_linalg_cod_decomp()	467
49.33.1.28 fgsl_linalg_cod_decomp_e()	467
49.33.1.29 fgsl_linalg_cod_issolve()	467
49.33.1.30 fgsl_linalg_cod_issolve2()	467
49.33.1.31 fgsl_linalg_cod_matz()	468
49.33.1.32 fgsl_linalg_cod_unpack()	468
49.33.1.33 fgsl_linalg_complex_cholesky_decomp()	468
49.33.1.34 fgsl_linalg_complex_cholesky_invert()	468
49.33.1.35 fgsl_linalg_complex_cholesky_solve()	468
49.33.1.36 fgsl_linalg_complex_cholesky_svx()	469

49.33.1.37 fgsl_linalg_complex_householder_hm()	469
49.33.1.38 fgsl_linalg_complex_householder_hv()	469
49.33.1.39 fgsl_linalg_complex_householder_mh()	469
49.33.1.40 fgsl_linalg_complex_householder_transform()	469
49.33.1.41 fgsl_linalg_complex_lu_decomp()	469
49.33.1.42 fgsl_linalg_complex_lu_det()	470
49.33.1.43 fgsl_linalg_complex_lu_invert()	470
49.33.1.44 fgsl_linalg_complex_lu_invx()	470
49.33.1.45 fgsl_linalg_complex_lu_lndet()	470
49.33.1.46 fgsl_linalg_complex_lu_refine()	470
49.33.1.47 fgsl_linalg_complex_lu_sgndet()	470
49.33.1.48 fgsl_linalg_complex_lu_solve()	471
49.33.1.49 fgsl_linalg_complex_lu_svx()	471
49.33.1.50 fgsl_linalg_complex_qr_decomp()	471
49.33.1.51 fgsl_linalg_complex_qr_decomp_r()	471
49.33.1.52 fgsl_linalg_complex_qr_issolve()	471
49.33.1.53 fgsl_linalg_complex_qr_issolve_r()	472
49.33.1.54 fgsl_linalg_complex_qr_qhvec()	472
49.33.1.55 fgsl_linalg_complex_qr_qhvec_r()	472
49.33.1.56 fgsl_linalg_complex_qr_qvec()	472
49.33.1.57 fgsl_linalg_complex_qr_solve()	472
49.33.1.58 fgsl_linalg_complex_qr_solve_r()	473
49.33.1.59 fgsl_linalg_complex_qr_svx()	473
49.33.1.60 fgsl_linalg_complex_qr_unpack_r()	473
49.33.1.61 fgsl_linalg_complex_tri_invert()	473
49.33.1.62 fgsl_linalg_complex_tri_lhl()	473
49.33.1.63 fgsl_linalg_complex_tri_ul()	473
49.33.1.64 fgsl_linalg_givens()	474
49.33.1.65 fgsl_linalg_givens_gv()	474
49.33.1.66 fgsl_linalg_hermt_d_decomp()	474
49.33.1.67 fgsl_linalg_hermt_d_unpack()	474
49.33.1.68 fgsl_linalg_hermt_d_unpack_t()	474
49.33.1.69 fgsl_linalg_hessenberg_decomp()	475
49.33.1.70 fgsl_linalg_hessenberg_set_zero()	475
49.33.1.71 fgsl_linalg_hessenberg_unpack()	475
49.33.1.72 fgsl_linalg_hessenberg_unpack_accum()	475
49.33.1.73 fgsl_linalg_hesstri_decomp()	475
49.33.1.74 fgsl_linalg_hh_solve()	475
49.33.1.75 fgsl_linalg_hh_svx()	476
49.33.1.76 fgsl_linalg_householder_hm()	476
49.33.1.77 fgsl_linalg_householder_hv()	476
49.33.1.78 fgsl_linalg_householder_mh()	476

49.33.1.79 fgsl_linalg_householder_transform()	476
49.33.1.80 fgsl_linalg_ldlt_band_decomp()	476
49.33.1.81 fgsl_linalg_ldlt_band_rcond()	477
49.33.1.82 fgsl_linalg_ldlt_band_solve()	477
49.33.1.83 fgsl_linalg_ldlt_band_svx()	477
49.33.1.84 fgsl_linalg_ldlt_band_unpack()	477
49.33.1.85 fgsl_linalg_ldlt_decomp()	477
49.33.1.86 fgsl_linalg_ldlt_rcond()	477
49.33.1.87 fgsl_linalg_ldlt_solve()	478
49.33.1.88 fgsl_linalg_ldlt_svx()	478
49.33.1.89 fgsl_linalg_lq_decomp()	478
49.33.1.90 fgsl_linalg_lq_issolve()	478
49.33.1.91 fgsl_linalg_lq_qtvec()	478
49.33.1.92 fgsl_linalg_lq_unpack()	479
49.33.1.93 fgsl_linalg_lu_decomp()	479
49.33.1.94 fgsl_linalg_lu_det()	479
49.33.1.95 fgsl_linalg_lu_invert()	479
49.33.1.96 fgsl_linalg_lu_invx()	479
49.33.1.97 fgsl_linalg_lu_ldet()	479
49.33.1.98 fgsl_linalg_lu_refine()	480
49.33.1.99 fgsl_linalg_lu_sgndet()	480
49.33.1.100 fgsl_linalg_lu_solve()	480
49.33.1.101 fgsl_linalg_lu_svx()	480
49.33.1.102 fgsl_linalg_mcholesky_decomp()	480
49.33.1.103 fgsl_linalg_mcholesky_invert()	481
49.33.1.104 fgsl_linalg_mcholesky_rcond()	481
49.33.1.105 fgsl_linalg_mcholesky_solve()	481
49.33.1.106 fgsl_linalg_mcholesky_svx()	481
49.33.1.107 fgsl_linalg_pcholesky_decomp()	481
49.33.1.108 fgsl_linalg_pcholesky_decomp2()	482
49.33.1.109 fgsl_linalg_pcholesky_invert()	482
49.33.1.110 fgsl_linalg_pcholesky_rcond()	482
49.33.1.111 fgsl_linalg_pcholesky_solve()	482
49.33.1.112 fgsl_linalg_pcholesky_solve2()	482
49.33.1.113 fgsl_linalg_pcholesky_svx()	483
49.33.1.114 fgsl_linalg_pcholesky_svx2()	483
49.33.1.115 fgsl_linalg_ql_decomp()	483
49.33.1.116 fgsl_linalg_ql_unpack()	483
49.33.1.117 fgsl_linalg_qr_decomp()	483
49.33.1.118 fgsl_linalg_qr_decomp_r()	483
49.33.1.119 fgsl_linalg_qr_issolve()	484
49.33.1.120 fgsl_linalg_qr_issolve_r()	484

49.33.1.121 fgsl_linalg_qr_matq()	484
49.33.1.122 fgsl_linalg_qr_qrsolve()	484
49.33.1.123 fgsl_linalg_qr_qtmat()	484
49.33.1.124 fgsl_linalg_qr_qtmat_r()	485
49.33.1.125 fgsl_linalg_qr_qtvec()	485
49.33.1.126 fgsl_linalg_qr_qtvec_r()	485
49.33.1.127 fgsl_linalg_qr_qvec()	485
49.33.1.128 fgsl_linalg_qr_rsolve()	485
49.33.1.129 fgsl_linalg_qr_rsvx()	486
49.33.1.130 fgsl_linalg_qr_solve()	486
49.33.1.131 fgsl_linalg_qr_solve_r()	486
49.33.1.132 fgsl_linalg_qr_svx()	486
49.33.1.133 fgsl_linalg_qr_ud_decomp()	486
49.33.1.134 fgsl_linalg_qr_ud_issolve()	487
49.33.1.135 fgsl_linalg_qr_unpack()	487
49.33.1.136 fgsl_linalg_qr_unpack_r()	487
49.33.1.137 fgsl_linalg_qr_update()	487
49.33.1.138 fgsl_linalg_qr_ur_decomp()	487
49.33.1.139 fgsl_linalg_qr_uu_decomp()	488
49.33.1.140 fgsl_linalg_qr_uu_issolve()	488
49.33.1.141 fgsl_linalg_qr_uu_qtvec()	488
49.33.1.142 fgsl_linalg_qr_uz_decomp()	488
49.33.1.143 fgsl_linalg_qrpt_decomp()	488
49.33.1.144 fgsl_linalg_qrpt_decomp2()	489
49.33.1.145 fgsl_linalg_qrpt_issolve()	489
49.33.1.146 fgsl_linalg_qrpt_issolve2()	489
49.33.1.147 fgsl_linalg_qrpt_qrsolve()	489
49.33.1.148 fgsl_linalg_qrpt_rank()	490
49.33.1.149 fgsl_linalg_qrpt_rcond()	490
49.33.1.150 fgsl_linalg_qrpt_rsolve()	490
49.33.1.151 fgsl_linalg_qrpt_rsvx()	490
49.33.1.152 fgsl_linalg_qrpt_solve()	490
49.33.1.153 fgsl_linalg_qrpt_svx()	491
49.33.1.154 fgsl_linalg_qrpt_update()	491
49.33.1.155 fgsl_linalg_r_solve()	491
49.33.1.156 fgsl_linalg_r_svx()	491
49.33.1.157 fgsl_linalg_solve_cyc_tridiag()	491
49.33.1.158 fgsl_linalg_solve_symm_cyc_tridiag()	492
49.33.1.159 fgsl_linalg_solve_symm_tridiag()	492
49.33.1.160 fgsl_linalg_solve_tridiag()	492
49.33.1.161 fgsl_linalg_sv_decomp()	492
49.33.1.162 fgsl_linalg_sv_decomp_jacobi()	492

49.33.1.163 fgsl_linalg_sv_decomp_mod()	493
49.33.1.164 fgsl_linalg_sv_leverage()	493
49.33.1.165 fgsl_linalg_sv_solve()	493
49.33.1.166 fgsl_linalg_symmtd_decomp()	493
49.33.1.167 fgsl_linalg_symmtd_unpack()	493
49.33.1.168 fgsl_linalg_symmtd_unpack_t()	494
49.33.1.169 fgsl_linalg_tri_invert()	494
49.33.1.170 fgsl_linalg_tri_lower_invert()	494
49.33.1.171 fgsl_linalg_tri_lower_rcond()	494
49.33.1.172 fgsl_linalg_tri_lower_unit_invert()	494
49.33.1.173 fgsl_linalg_tri_ltl()	494
49.33.1.174 fgsl_linalg_tri_rcond()	495
49.33.1.175 fgsl_linalg_tri_ul()	495
49.33.1.176 fgsl_linalg_tri_upper_invert()	495
49.33.1.177 fgsl_linalg_tri_upper_rcond()	495
49.33.1.178 fgsl_linalg_tri_upper_unit_invert()	495
49.34 interface/linalg.finc File Reference	495
49.34.1 Function/Subroutine Documentation	499
49.34.1.1 gsl_linalg_balance_matrix()	499
49.34.1.2 gsl_linalg_bidiag_decomp()	499
49.34.1.3 gsl_linalg_bidiag_unpack()	499
49.34.1.4 gsl_linalg_bidiag_unpack2()	500
49.34.1.5 gsl_linalg_bidiag_unpack_b()	500
49.34.1.6 gsl_linalg_cholesky_band_decomp()	500
49.34.1.7 gsl_linalg_cholesky_band_invert()	500
49.34.1.8 gsl_linalg_cholesky_band_rcond()	500
49.34.1.9 gsl_linalg_cholesky_band_scale()	500
49.34.1.10 gsl_linalg_cholesky_band_scale_apply()	501
49.34.1.11 gsl_linalg_cholesky_band_solve()	501
49.34.1.12 gsl_linalg_cholesky_band_solve2()	501
49.34.1.13 gsl_linalg_cholesky_band_svx()	501
49.34.1.14 gsl_linalg_cholesky_band_svxm()	501
49.34.1.15 gsl_linalg_cholesky_band_unpack()	501
49.34.1.16 gsl_linalg_cholesky_decomp()	502
49.34.1.17 gsl_linalg_cholesky_decomp1()	502
49.34.1.18 gsl_linalg_cholesky_decomp2()	502
49.34.1.19 gsl_linalg_cholesky_invert()	502
49.34.1.20 gsl_linalg_cholesky_rcond()	502
49.34.1.21 gsl_linalg_cholesky_scale()	502
49.34.1.22 gsl_linalg_cholesky_scale_apply()	503
49.34.1.23 gsl_linalg_cholesky_solve()	503
49.34.1.24 gsl_linalg_cholesky_solve2()	503

49.34.1.25 <code>gsl_linalg_cholesky_svx()</code>	503
49.34.1.26 <code>gsl_linalg_cholesky_svx2()</code>	503
49.34.1.27 <code>gsl_linalg_cod_decomp()</code>	504
49.34.1.28 <code>gsl_linalg_cod_decomp_e()</code>	504
49.34.1.29 <code>gsl_linalg_cod_issolve()</code>	504
49.34.1.30 <code>gsl_linalg_cod_issolve2()</code>	504
49.34.1.31 <code>gsl_linalg_cod_matz()</code>	505
49.34.1.32 <code>gsl_linalg_cod_unpack()</code>	505
49.34.1.33 <code>gsl_linalg_complex_cholesky_decomp()</code>	505
49.34.1.34 <code>gsl_linalg_complex_cholesky_invert()</code>	505
49.34.1.35 <code>gsl_linalg_complex_cholesky_solve()</code>	505
49.34.1.36 <code>gsl_linalg_complex_cholesky_svx()</code>	506
49.34.1.37 <code>gsl_linalg_complex_householder_hm()</code>	506
49.34.1.38 <code>gsl_linalg_complex_householder_hv()</code>	506
49.34.1.39 <code>gsl_linalg_complex_householder_mh()</code>	506
49.34.1.40 <code>gsl_linalg_complex_householder_transform()</code>	506
49.34.1.41 <code>gsl_linalg_complex_lu_decomp()</code>	506
49.34.1.42 <code>gsl_linalg_complex_lu_det()</code>	507
49.34.1.43 <code>gsl_linalg_complex_lu_invert()</code>	507
49.34.1.44 <code>gsl_linalg_complex_lu_invx()</code>	507
49.34.1.45 <code>gsl_linalg_complex_lu_lndet()</code>	507
49.34.1.46 <code>gsl_linalg_complex_lu_refine()</code>	507
49.34.1.47 <code>gsl_linalg_complex_lu_sgndet()</code>	507
49.34.1.48 <code>gsl_linalg_complex_lu_solve()</code>	508
49.34.1.49 <code>gsl_linalg_complex_lu_svx()</code>	508
49.34.1.50 <code>gsl_linalg_complex_qr_decomp()</code>	508
49.34.1.51 <code>gsl_linalg_complex_qr_decomp_r()</code>	508
49.34.1.52 <code>gsl_linalg_complex_qr_issolve()</code>	508
49.34.1.53 <code>gsl_linalg_complex_qr_issolve_r()</code>	509
49.34.1.54 <code>gsl_linalg_complex_qr_qhvec()</code>	509
49.34.1.55 <code>gsl_linalg_complex_qr_qhvec_r()</code>	509
49.34.1.56 <code>gsl_linalg_complex_qr_qvec()</code>	509
49.34.1.57 <code>gsl_linalg_complex_qr_solve()</code>	509
49.34.1.58 <code>gsl_linalg_complex_qr_solve_r()</code>	510
49.34.1.59 <code>gsl_linalg_complex_qr_svx()</code>	510
49.34.1.60 <code>gsl_linalg_complex_qr_unpack_r()</code>	510
49.34.1.61 <code>gsl_linalg_complex_tri_invert()</code>	510
49.34.1.62 <code>gsl_linalg_complex_tri_lhl()</code>	510
49.34.1.63 <code>gsl_linalg_complex_tri_ul()</code>	510
49.34.1.64 <code>gsl_linalg_givens()</code>	511
49.34.1.65 <code>gsl_linalg_givens_gv()</code>	511
49.34.1.66 <code>gsl_linalg_hermtdecomp()</code>	511

49.34.1.67 <code>gsl_linalg_hermt_d_unpack()</code>	511
49.34.1.68 <code>gsl_linalg_hermt_d_unpack_t()</code>	511
49.34.1.69 <code>gsl_linalg_hessenberg_decomp()</code>	512
49.34.1.70 <code>gsl_linalg_hessenberg_set_zero()</code>	512
49.34.1.71 <code>gsl_linalg_hessenberg_unpack()</code>	512
49.34.1.72 <code>gsl_linalg_hessenberg_unpack_accum()</code>	512
49.34.1.73 <code>gsl_linalg_hesstri_decomp()</code>	512
49.34.1.74 <code>gsl_linalg_hh_solve()</code>	512
49.34.1.75 <code>gsl_linalg_hh_svx()</code>	513
49.34.1.76 <code>gsl_linalg_householder_hm()</code>	513
49.34.1.77 <code>gsl_linalg_householder_hv()</code>	513
49.34.1.78 <code>gsl_linalg_householder_mh()</code>	513
49.34.1.79 <code>gsl_linalg_householder_transform()</code>	513
49.34.1.80 <code>gsl_linalg_ldlt_band_decomp()</code>	513
49.34.1.81 <code>gsl_linalg_ldlt_band_rcond()</code>	514
49.34.1.82 <code>gsl_linalg_ldlt_band_solve()</code>	514
49.34.1.83 <code>gsl_linalg_ldlt_band_svx()</code>	514
49.34.1.84 <code>gsl_linalg_ldlt_band_unpack()</code>	514
49.34.1.85 <code>gsl_linalg_ldlt_decomp()</code>	514
49.34.1.86 <code>gsl_linalg_ldlt_rcond()</code>	514
49.34.1.87 <code>gsl_linalg_ldlt_solve()</code>	515
49.34.1.88 <code>gsl_linalg_ldlt_svx()</code>	515
49.34.1.89 <code>gsl_linalg_lq_decomp()</code>	515
49.34.1.90 <code>gsl_linalg_lq_lsolve()</code>	515
49.34.1.91 <code>gsl_linalg_lq_qtvec()</code>	515
49.34.1.92 <code>gsl_linalg_lq_unpack()</code>	516
49.34.1.93 <code>gsl_linalg_lu_decomp()</code>	516
49.34.1.94 <code>gsl_linalg_lu_det()</code>	516
49.34.1.95 <code>gsl_linalg_lu_invert()</code>	516
49.34.1.96 <code>gsl_linalg_lu_invx()</code>	516
49.34.1.97 <code>gsl_linalg_lu_ldet()</code>	516
49.34.1.98 <code>gsl_linalg_lu_refine()</code>	517
49.34.1.99 <code>gsl_linalg_lu_sgndet()</code>	517
49.34.1.100 <code>gsl_linalg_lu_solve()</code>	517
49.34.1.101 <code>gsl_linalg_lu_svx()</code>	517
49.34.1.102 <code>gsl_linalg_mcholesky_decomp()</code>	517
49.34.1.103 <code>gsl_linalg_mcholesky_invert()</code>	518
49.34.1.104 <code>gsl_linalg_mcholesky_rcond()</code>	518
49.34.1.105 <code>gsl_linalg_mcholesky_solve()</code>	518
49.34.1.106 <code>gsl_linalg_mcholesky_svx()</code>	518
49.34.1.107 <code>gsl_linalg_pcholesky_decomp()</code>	518
49.34.1.108 <code>gsl_linalg_pcholesky_decomp2()</code>	519

49.34.1.109	gsl_linalg_pcholesky_invert()	519
49.34.1.110	gsl_linalg_pcholesky_rcond()	519
49.34.1.111	gsl_linalg_pcholesky_solve()	519
49.34.1.112	gsl_linalg_pcholesky_solve2()	519
49.34.1.113	gsl_linalg_pcholesky_svx()	520
49.34.1.114	gsl_linalg_pcholesky_svx2()	520
49.34.1.115	gsl_linalg_ql_decomp()	520
49.34.1.116	gsl_linalg_ql_unpack()	520
49.34.1.117	gsl_linalg_qr_decomp()	520
49.34.1.118	gsl_linalg_qr_decomp_r()	520
49.34.1.119	gsl_linalg_qr_issolve()	521
49.34.1.120	gsl_linalg_qr_issolve_r()	521
49.34.1.121	gsl_linalg_qr_matq()	521
49.34.1.122	gsl_linalg_qr_qrsolve()	521
49.34.1.123	gsl_linalg_qr_qtmat()	521
49.34.1.124	gsl_linalg_qr_qtmat_r()	522
49.34.1.125	gsl_linalg_qr_qtvec()	522
49.34.1.126	gsl_linalg_qr_qtvec_r()	522
49.34.1.127	gsl_linalg_qr_qvec()	522
49.34.1.128	gsl_linalg_qr_solve()	522
49.34.1.129	gsl_linalg_qr_rsvx()	523
49.34.1.130	gsl_linalg_qr_solve()	523
49.34.1.131	gsl_linalg_qr_solve_r()	523
49.34.1.132	gsl_linalg_qr_svx()	523
49.34.1.133	gsl_linalg_qr_ud_decomp()	523
49.34.1.134	gsl_linalg_qr_ud_issolve()	524
49.34.1.135	gsl_linalg_qr_unpack()	524
49.34.1.136	gsl_linalg_qr_unpack_r()	524
49.34.1.137	gsl_linalg_qr_update()	524
49.34.1.138	gsl_linalg_qr_ur_decomp()	524
49.34.1.139	gsl_linalg_qr_uu_decomp()	525
49.34.1.140	gsl_linalg_qr_uu_issolve()	525
49.34.1.141	gsl_linalg_qr_uu_qtvec()	525
49.34.1.142	gsl_linalg_qr_uz_decomp()	525
49.34.1.143	gsl_linalg_qrpt_decomp()	525
49.34.1.144	gsl_linalg_qrpt_decomp2()	526
49.34.1.145	gsl_linalg_qrpt_issolve()	526
49.34.1.146	gsl_linalg_qrpt_issolve2()	526
49.34.1.147	gsl_linalg_qrpt_qrsolve()	526
49.34.1.148	gsl_linalg_qrpt_rank()	527
49.34.1.149	gsl_linalg_qrpt_rcond()	527
49.34.1.150	gsl_linalg_qrpt_solve()	527

49.34.1.151	gsl_linalg_qrpt_rsvx()	527
49.34.1.152	gsl_linalg_qrpt_solve()	527
49.34.1.153	gsl_linalg_qrpt_svx()	528
49.34.1.154	gsl_linalg_qrpt_update()	528
49.34.1.155	gsl_linalg_r_solve()	528
49.34.1.156	gsl_linalg_r_svx()	528
49.34.1.157	gsl_linalg_solve_cyc_tridiag()	528
49.34.1.158	gsl_linalg_solve_symm_cyc_tridiag()	529
49.34.1.159	gsl_linalg_solve_symm_tridiag()	529
49.34.1.160	gsl_linalg_solve_tridiag()	529
49.34.1.161	gsl_linalg_sv_decomp()	529
49.34.1.162	gsl_linalg_sv_decomp_jacobi()	529
49.34.1.163	gsl_linalg_sv_decomp_mod()	530
49.34.1.164	gsl_linalg_sv_leverage()	530
49.34.1.165	gsl_linalg_sv_solve()	530
49.34.1.166	gsl_linalg_symmtd_decomp()	530
49.34.1.167	gsl_linalg_symmtd_unpack()	530
49.34.1.168	gsl_linalg_symmtd_unpack_t()	531
49.34.1.169	gsl_linalg_tri_invert()	531
49.34.1.170	gsl_linalg_tri_lower_invert()	531
49.34.1.171	gsl_linalg_tri_lower_rcond()	531
49.34.1.172	gsl_linalg_tri_lower_unit_invert()	531
49.34.1.173	gsl_linalg_tri_ltl()	531
49.34.1.174	gsl_linalg_tri_rcond()	532
49.34.1.175	gsl_linalg_tri_ul()	532
49.34.1.176	gsl_linalg_tri_upper_invert()	532
49.34.1.177	gsl_linalg_tri_upper_rcond()	532
49.34.1.178	gsl_linalg_tri_upper_unit_invert()	532
49.35	api/math.finc File Reference	532
49.35.1	Function/Subroutine Documentation	533
49.35.1.1	fgsl_acosh()	533
49.35.1.2	fgsl_asinh()	533
49.35.1.3	fgsl_atanh()	534
49.35.1.4	fgsl_expm1()	534
49.35.1.5	fgsl_fcmp()	534
49.35.1.6	fgsl_finite()	534
49.35.1.7	fgsl_fn_eval()	534
49.35.1.8	fgsl_fn_fdf_eval_df()	535
49.35.1.9	fgsl_fn_fdf_eval_f()	535
49.35.1.10	fgsl_fn_fdf_eval_f_df()	535
49.35.1.11	fgsl_fexp()	536
49.35.1.12	fgsl_function_fdf_free()	536

49.35.1.13 fgsl_function_fdf_init()	536
49.35.1.14 fgsl_function_free()	537
49.35.1.15 fgsl_function_init()	537
49.35.1.16 fgsl_isinf()	537
49.35.1.17 fgsl_isnan()	537
49.35.1.18 fgsl_ldexp()	537
49.35.1.19 fgsl_log1p()	538
49.36 interface/math.finc File Reference	538
49.36.1 Function/Subroutine Documentation	538
49.36.1.1 fgsl_fn_eval_aux()	539
49.36.1.2 fgsl_fn_fdf_eval_df_aux()	539
49.36.1.3 fgsl_fn_fdf_eval_f_aux()	539
49.36.1.4 fgsl_fn_fdf_eval_f_df_aux()	539
49.36.1.5 fgsl_function_cfree()	539
49.36.1.6 fgsl_function_cinit()	539
49.36.1.7 fgsl_function_fdf_cfree()	540
49.36.1.8 fgsl_function_fdf_cinit()	540
49.36.1.9 fgsl_hypot()	540
49.36.1.10 fgsl_hypot3()	540
49.36.1.11 gsl_acosh()	540
49.36.1.12 gsl_asinh()	540
49.36.1.13 gsl_atanh()	541
49.36.1.14 gsl_expm1()	541
49.36.1.15 gsl_fcmp()	541
49.36.1.16 gsl_finite()	541
49.36.1.17 gsl_frexp()	541
49.36.1.18 gsl_isinf()	541
49.36.1.19 gsl_isnan()	542
49.36.1.20 gsl_ldexp()	542
49.36.1.21 gsl_log1p()	542
49.37 api/min.finc File Reference	542
49.37.1 Function/Subroutine Documentation	542
49.37.1.1 fgsl_min_fminimizer_alloc()	543
49.37.1.2 fgsl_min_fminimizer_f_lower()	543
49.37.1.3 fgsl_min_fminimizer_f_minimum()	543
49.37.1.4 fgsl_min_fminimizer_f_upper()	543
49.37.1.5 fgsl_min_fminimizer_free()	543
49.37.1.6 fgsl_min_fminimizer_iterate()	543
49.37.1.7 fgsl_min_fminimizer_name()	543
49.37.1.8 fgsl_min_fminimizer_set()	544
49.37.1.9 fgsl_min_fminimizer_set_with_values()	544
49.37.1.10 fgsl_min_fminimizer_status()	544

49.37.1.11 fgsl_min_fminimizer_x_lower()	544
49.37.1.12 fgsl_min_fminimizer_x_minimum()	544
49.37.1.13 fgsl_min_fminimizer_x_upper()	544
49.37.1.14 fgsl_min_test_interval()	545
49.38 interface/min.finc File Reference	545
49.38.1 Function/Subroutine Documentation	545
49.38.1.1 fgsl_aux_fminimizer_alloc()	546
49.38.1.2 gsl_min_fminimizer_alloc()	546
49.38.1.3 gsl_min_fminimizer_f_lower()	546
49.38.1.4 gsl_min_fminimizer_f_minimum()	546
49.38.1.5 gsl_min_fminimizer_f_upper()	546
49.38.1.6 gsl_min_fminimizer_free()	546
49.38.1.7 gsl_min_fminimizer_iterate()	546
49.38.1.8 gsl_min_fminimizer_name()	547
49.38.1.9 gsl_min_fminimizer_set()	547
49.38.1.10 gsl_min_fminimizer_set_with_values()	547
49.38.1.11 gsl_min_fminimizer_x_lower()	547
49.38.1.12 gsl_min_fminimizer_x_minimum()	547
49.38.1.13 gsl_min_fminimizer_x_upper()	547
49.38.1.14 gsl_min_test_interval()	548
49.39 api/misc.finc File Reference	548
49.39.1 Function/Subroutine Documentation	548
49.39.1.1 fgsl_name()	549
49.39.1.2 fgsl_sizeof_char()	549
49.39.1.3 fgsl_sizeof_double()	549
49.39.1.4 fgsl_sizeof_float()	549
49.39.1.5 fgsl_sizeof_int()	549
49.39.1.6 fgsl_sizeof_long()	549
49.39.1.7 fgsl_sizeof_size_t()	550
49.40 interface/misc.finc File Reference	550
49.40.1 Function/Subroutine Documentation	550
49.40.1.1 gsl_aux_sizeof_char()	550
49.40.1.2 gsl_aux_sizeof_double()	550
49.40.1.3 gsl_aux_sizeof_float()	551
49.40.1.4 gsl_aux_sizeof_int()	551
49.40.1.5 gsl_aux_sizeof_long()	551
49.40.1.6 gsl_aux_sizeof_size_t()	551
49.41 api/montecarlo.finc File Reference	551
49.41.1 Function/Subroutine Documentation	552
49.41.1.1 fgsl_monte_function_free()	552
49.41.1.2 fgsl_monte_function_init()	552
49.41.1.3 fgsl_monte_function_status()	552

49.41.1.4 fgsl_monte_miser_alloc()	552
49.41.1.5 fgsl_monte_miser_free()	552
49.41.1.6 fgsl_monte_miser_getparams()	553
49.41.1.7 fgsl_monte_miser_init()	553
49.41.1.8 fgsl_monte_miser_integrate()	553
49.41.1.9 fgsl_monte_miser_setparams()	553
49.41.1.10 fgsl_monte_miser_status()	554
49.41.1.11 fgsl_monte_plain_alloc()	554
49.41.1.12 fgsl_monte_plain_free()	554
49.41.1.13 fgsl_monte_plain_init()	554
49.41.1.14 fgsl_monte_plain_integrate()	554
49.41.1.15 fgsl_monte_plain_status()	554
49.41.1.16 fgsl_monte_vegas_alloc()	555
49.41.1.17 fgsl_monte_vegas_chisq()	555
49.41.1.18 fgsl_monte_vegas_free()	555
49.41.1.19 fgsl_monte_vegas_getparams()	555
49.41.1.20 fgsl_monte_vegas_init()	555
49.41.1.21 fgsl_monte_vegas_integrate()	556
49.41.1.22 fgsl_monte_vegas_runval()	556
49.41.1.23 fgsl_monte_vegas_setparams()	556
49.41.1.24 fgsl_monte_vegas_status()	556
49.42 interface/montecarlo.finc File Reference	557
49.42.1 Function/Subroutine Documentation	557
49.42.1.1 fgsl_monte_function_cfree()	558
49.42.1.2 fgsl_monte_function_cinit()	558
49.42.1.3 fgsl_monte_miser_cgetparams()	558
49.42.1.4 fgsl_monte_miser_csetparams()	558
49.42.1.5 fgsl_monte_vegas_cgetparams()	558
49.42.1.6 fgsl_monte_vegas_csetparams()	559
49.42.1.7 gsl_monte_miser_alloc()	559
49.42.1.8 gsl_monte_miser_free()	559
49.42.1.9 gsl_monte_miser_init()	559
49.42.1.10 gsl_monte_miser_integrate()	559
49.42.1.11 gsl_monte_plain_alloc()	560
49.42.1.12 gsl_monte_plain_free()	560
49.42.1.13 gsl_monte_plain_init()	560
49.42.1.14 gsl_monte_plain_integrate()	560
49.42.1.15 gsl_monte_vegas_alloc()	560
49.42.1.16 gsl_monte_vegas_chisq()	560
49.42.1.17 gsl_monte_vegas_free()	561
49.42.1.18 gsl_monte_vegas_init()	561
49.42.1.19 gsl_monte_vegas_integrate()	561

49.42.1.20	gsl_monte_vegas_runval()	561
49.43	api/movstat.finc File Reference	561
49.43.1	Function/Subroutine Documentation	562
49.43.1.1	fgsl_movstat_alloc()	562
49.43.1.2	fgsl_movstat_alloc2()	562
49.43.1.3	fgsl_movstat_apply()	562
49.43.1.4	fgsl_movstat_fill()	562
49.43.1.5	fgsl_movstat_free()	562
49.43.1.6	fgsl_movstat_mad()	563
49.43.1.7	fgsl_movstat_mad0()	563
49.43.1.8	fgsl_movstat_max()	563
49.43.1.9	fgsl_movstat_mean()	563
49.43.1.10	fgsl_movstat_median()	563
49.43.1.11	fgsl_movstat_min()	564
49.43.1.12	fgsl_movstat_minmax()	564
49.43.1.13	fgsl_movstat_qn()	564
49.43.1.14	fgsl_movstat_qqr()	564
49.43.1.15	fgsl_movstat_sd()	564
49.43.1.16	fgsl_movstat_sn()	565
49.43.1.17	fgsl_movstat_sum()	565
49.43.1.18	fgsl_movstat_variance()	565
49.44	interface/movstat.finc File Reference	565
49.44.1	Function/Subroutine Documentation	566
49.44.1.1	gsl_movstat_alloc()	566
49.44.1.2	gsl_movstat_alloc2()	566
49.44.1.3	gsl_movstat_apply()	566
49.44.1.4	gsl_movstat_fill()	567
49.44.1.5	gsl_movstat_free()	567
49.44.1.6	gsl_movstat_mad()	567
49.44.1.7	gsl_movstat_mad0()	567
49.44.1.8	gsl_movstat_max()	567
49.44.1.9	gsl_movstat_mean()	568
49.44.1.10	gsl_movstat_median()	568
49.44.1.11	gsl_movstat_min()	568
49.44.1.12	gsl_movstat_minmax()	568
49.44.1.13	gsl_movstat_qn()	568
49.44.1.14	gsl_movstat_qqr()	569
49.44.1.15	gsl_movstat_sd()	569
49.44.1.16	gsl_movstat_sn()	569
49.44.1.17	gsl_movstat_sum()	569
49.44.1.18	gsl_movstat_variance()	569
49.45	api/multifit.finc File Reference	570

49.45.1 Function/Subroutine Documentation	571
49.45.1.1 fgsl_multifit_covar()	572
49.45.1.2 fgsl_multifit_covar_qrpt()	572
49.45.1.3 fgsl_multifit_eval_wdf_nowts()	572
49.45.1.4 fgsl_multifit_eval_wdf_wts()	572
49.45.1.5 fgsl_multifit_eval_wf_nowts()	572
49.45.1.6 fgsl_multifit_eval_wf_wts()	573
49.45.1.7 fgsl_multifit_fdfridge_alloc()	573
49.45.1.8 fgsl_multifit_fdfridge_driver()	573
49.45.1.9 fgsl_multifit_fdfridge_free()	573
49.45.1.10 fgsl_multifit_fdfridge_iterate()	573
49.45.1.11 fgsl_multifit_fdfridge_name()	573
49.45.1.12 fgsl_multifit_fdfridge_niter()	574
49.45.1.13 fgsl_multifit_fdfridge_position()	574
49.45.1.14 fgsl_multifit_fdfridge_residual()	574
49.45.1.15 fgsl_multifit_fdfridge_set()	574
49.45.1.16 fgsl_multifit_fdfridge_set2()	574
49.45.1.17 fgsl_multifit_fdfridge_set3()	574
49.45.1.18 fgsl_multifit_fdfridge_wset()	575
49.45.1.19 fgsl_multifit_fdfridge_wset2()	575
49.45.1.20 fgsl_multifit_fdfridge_wset3()	575
49.45.1.21 fgsl_multifit_fdfsolver_alloc()	575
49.45.1.22 fgsl_multifit_fdfsolver_dif_df_nowts()	575
49.45.1.23 fgsl_multifit_fdfsolver_dif_df_wts()	576
49.45.1.24 fgsl_multifit_fdfsolver_driver()	576
49.45.1.25 fgsl_multifit_fdfsolver_dx()	576
49.45.1.26 fgsl_multifit_fdfsolver_f()	576
49.45.1.27 fgsl_multifit_fdfsolver_free()	576
49.45.1.28 fgsl_multifit_fdfsolver_iterate()	576
49.45.1.29 fgsl_multifit_fdfsolver_jac()	577
49.45.1.30 fgsl_multifit_fdfsolver_name()	577
49.45.1.31 fgsl_multifit_fdfsolver_niter()	577
49.45.1.32 fgsl_multifit_fdfsolver_position()	577
49.45.1.33 fgsl_multifit_fdfsolver_residual()	577
49.45.1.34 fgsl_multifit_fdfsolver_set()	577
49.45.1.35 fgsl_multifit_fdfsolver_status()	578
49.45.1.36 fgsl_multifit_fdfsolver_test()	578
49.45.1.37 fgsl_multifit_fdfsolver_wset()	578
49.45.1.38 fgsl_multifit_fsolver_alloc()	578
49.45.1.39 fgsl_multifit_fsolver_driver()	578
49.45.1.40 fgsl_multifit_fsolver_free()	579
49.45.1.41 fgsl_multifit_fsolver_iterate()	579

49.45.1.42 fgsl_multifit_fsolver_name()	579
49.45.1.43 fgsl_multifit_fsolver_position()	579
49.45.1.44 fgsl_multifit_fsolver_set()	579
49.45.1.45 fgsl_multifit_fsolver_status()	579
49.45.1.46 fgsl_multifit_function_fdf_free()	579
49.45.1.47 fgsl_multifit_function_fdf_init()	580
49.45.1.48 fgsl_multifit_function_free()	580
49.45.1.49 fgsl_multifit_function_init()	580
49.45.1.50 fgsl_multifit_gradient()	580
49.45.1.51 fgsl_multifit_linear()	580
49.45.1.52 fgsl_multifit_linear_alloc()	581
49.45.1.53 fgsl_multifit_linear_applyw()	581
49.45.1.54 fgsl_multifit_linear_bsvd()	581
49.45.1.55 fgsl_multifit_linear_est()	581
49.45.1.56 fgsl_multifit_linear_free()	581
49.45.1.57 fgsl_multifit_linear_gcv()	582
49.45.1.58 fgsl_multifit_linear_gcv_calc()	582
49.45.1.59 fgsl_multifit_linear_gcv_curve()	582
49.45.1.60 fgsl_multifit_linear_gcv_init()	582
49.45.1.61 fgsl_multifit_linear_gcv_min()	582
49.45.1.62 fgsl_multifit_linear_genform1()	583
49.45.1.63 fgsl_multifit_linear_genform2()	583
49.45.1.64 fgsl_multifit_linear_l_decomp()	583
49.45.1.65 fgsl_multifit_linear_lcorner()	583
49.45.1.66 fgsl_multifit_linear_lcorner2()	583
49.45.1.67 fgsl_multifit_linear_lcurvature()	584
49.45.1.68 fgsl_multifit_linear_lcurve()	584
49.45.1.69 fgsl_multifit_linear_lk()	584
49.45.1.70 fgsl_multifit_linear_lreg()	584
49.45.1.71 fgsl_multifit_linear_lsobolev()	584
49.45.1.72 fgsl_multifit_linear_rank()	585
49.45.1.73 fgsl_multifit_linear_rcond()	585
49.45.1.74 fgsl_multifit_linear_residuals()	585
49.45.1.75 fgsl_multifit_linear_solve()	585
49.45.1.76 fgsl_multifit_linear_stdform1()	585
49.45.1.77 fgsl_multifit_linear_stdform2()	586
49.45.1.78 fgsl_multifit_linear_svd()	586
49.45.1.79 fgsl_multifit_linear_tsvd()	586
49.45.1.80 fgsl_multifit_linear_wgenform2()	586
49.45.1.81 fgsl_multifit_linear_wstdform1()	587
49.45.1.82 fgsl_multifit_linear_wstdform2()	587
49.45.1.83 fgsl_multifit_robust()	587

49.45.1.84 fgsl_multifit_robust_alloc()	587
49.45.1.85 fgsl_multifit_robust_est()	588
49.45.1.86 fgsl_multifit_robust_free()	588
49.45.1.87 fgsl_multifit_robust_maxiter()	588
49.45.1.88 fgsl_multifit_robust_name()	588
49.45.1.89 fgsl_multifit_robust_residuals()	588
49.45.1.90 fgsl_multifit_robust_statistics()	588
49.45.1.91 fgsl_multifit_robust_tune()	589
49.45.1.92 fgsl_multifit_robust_weights()	589
49.45.1.93 fgsl_multifit_status()	589
49.45.1.94 fgsl_multifit_test_delta()	589
49.45.1.95 fgsl_multifit_test_gradient()	589
49.45.1.96 fgsl_multifit_wlinear()	589
49.45.1.97 fgsl_multifit_wlinear_svd()	590
49.45.1.98 fgsl_multifit_wlinear_tsvd()	590
49.45.1.99 fgsl_multifit_wlinear_usvd()	590
49.46 interface/multifit.finc File Reference	591
49.46.1 Function/Subroutine Documentation	593
49.46.1.1 fgsl_aux_multifit_fdfsolver_alloc()	593
49.46.1.2 fgsl_aux_multifit_fsolver_alloc()	593
49.46.1.3 fgsl_aux_multifit_robust_alloc()	593
49.46.1.4 fgsl_multifit_function_cfree()	593
49.46.1.5 fgsl_multifit_function_cinit()	593
49.46.1.6 fgsl_multifit_function_fdf_cfree()	594
49.46.1.7 fgsl_multifit_function_fdf_cinit()	594
49.46.1.8 gsl_multifit_covar()	594
49.46.1.9 gsl_multifit_covar_qrpt()	594
49.46.1.10 gsl_multifit_eval_wdf()	594
49.46.1.11 gsl_multifit_eval_wf()	595
49.46.1.12 gsl_multifit_fdfridge_alloc()	595
49.46.1.13 gsl_multifit_fdfridge_driver()	595
49.46.1.14 gsl_multifit_fdfridge_free()	595
49.46.1.15 gsl_multifit_fdfridge_iterate()	595
49.46.1.16 gsl_multifit_fdfridge_name()	595
49.46.1.17 gsl_multifit_fdfridge_niter()	596
49.46.1.18 gsl_multifit_fdfridge_position()	596
49.46.1.19 gsl_multifit_fdfridge_residual()	596
49.46.1.20 gsl_multifit_fdfridge_set()	596
49.46.1.21 gsl_multifit_fdfridge_set2()	596
49.46.1.22 gsl_multifit_fdfridge_set3()	596
49.46.1.23 gsl_multifit_fdfridge_wset()	597
49.46.1.24 gsl_multifit_fdfridge_wset2()	597

49.46.1.25 <code>gsl_multifit_fdfridge_wset3()</code>	597
49.46.1.26 <code>gsl_multifit_fdfsolver_alloc()</code>	597
49.46.1.27 <code>gsl_multifit_fdfsolver_dif_df()</code>	597
49.46.1.28 <code>gsl_multifit_fdfsolver_driver()</code>	598
49.46.1.29 <code>gsl_multifit_fdfsolver_dx()</code>	598
49.46.1.30 <code>gsl_multifit_fdfsolver_f()</code>	598
49.46.1.31 <code>gsl_multifit_fdfsolver_free()</code>	598
49.46.1.32 <code>gsl_multifit_fdfsolver_iterate()</code>	598
49.46.1.33 <code>gsl_multifit_fdfsolver_jac()</code>	598
49.46.1.34 <code>gsl_multifit_fdfsolver_name()</code>	599
49.46.1.35 <code>gsl_multifit_fdfsolver_niter()</code>	599
49.46.1.36 <code>gsl_multifit_fdfsolver_position()</code>	599
49.46.1.37 <code>gsl_multifit_fdfsolver_residual()</code>	599
49.46.1.38 <code>gsl_multifit_fdfsolver_set()</code>	599
49.46.1.39 <code>gsl_multifit_fdfsolver_test()</code>	599
49.46.1.40 <code>gsl_multifit_fdfsolver_wset()</code>	600
49.46.1.41 <code>gsl_multifit_fsolver_alloc()</code>	600
49.46.1.42 <code>gsl_multifit_fsolver_driver()</code>	600
49.46.1.43 <code>gsl_multifit_fsolver_free()</code>	600
49.46.1.44 <code>gsl_multifit_fsolver_iterate()</code>	600
49.46.1.45 <code>gsl_multifit_fsolver_name()</code>	600
49.46.1.46 <code>gsl_multifit_fsolver_position()</code>	601
49.46.1.47 <code>gsl_multifit_fsolver_set()</code>	601
49.46.1.48 <code>gsl_multifit_gradient()</code>	601
49.46.1.49 <code>gsl_multifit_linear()</code>	601
49.46.1.50 <code>gsl_multifit_linear_alloc()</code>	601
49.46.1.51 <code>gsl_multifit_linear_applyw()</code>	602
49.46.1.52 <code>gsl_multifit_linear_bsvd()</code>	602
49.46.1.53 <code>gsl_multifit_linear_est()</code>	602
49.46.1.54 <code>gsl_multifit_linear_free()</code>	602
49.46.1.55 <code>gsl_multifit_linear_gcv()</code>	602
49.46.1.56 <code>gsl_multifit_linear_gcv_calc()</code>	603
49.46.1.57 <code>gsl_multifit_linear_gcv_curve()</code>	603
49.46.1.58 <code>gsl_multifit_linear_gcv_init()</code>	603
49.46.1.59 <code>gsl_multifit_linear_gcv_min()</code>	603
49.46.1.60 <code>gsl_multifit_linear_genform1()</code>	603
49.46.1.61 <code>gsl_multifit_linear_genform2()</code>	604
49.46.1.62 <code>gsl_multifit_linear_l_decomp()</code>	604
49.46.1.63 <code>gsl_multifit_linear_lcorner()</code>	604
49.46.1.64 <code>gsl_multifit_linear_lcorner2()</code>	604
49.46.1.65 <code>gsl_multifit_linear_lcurvature()</code>	604
49.46.1.66 <code>gsl_multifit_linear_lcurve()</code>	605

49.46.1.67	gsl_multifit_linear_lk()	605
49.46.1.68	gsl_multifit_linear_lreg()	605
49.46.1.69	gsl_multifit_linear_lsobolev()	605
49.46.1.70	gsl_multifit_linear_rank()	605
49.46.1.71	gsl_multifit_linear_rcond()	606
49.46.1.72	gsl_multifit_linear_residuals()	606
49.46.1.73	gsl_multifit_linear_solve()	606
49.46.1.74	gsl_multifit_linear_stdform1()	606
49.46.1.75	gsl_multifit_linear_stdform2()	606
49.46.1.76	gsl_multifit_linear_svd()	607
49.46.1.77	gsl_multifit_linear_tsvd()	607
49.46.1.78	gsl_multifit_linear_wgenform2()	607
49.46.1.79	gsl_multifit_linear_wstdform1()	607
49.46.1.80	gsl_multifit_linear_wstdform2()	608
49.46.1.81	gsl_multifit_robust()	608
49.46.1.82	gsl_multifit_robust_alloc()	608
49.46.1.83	gsl_multifit_robust_est()	608
49.46.1.84	gsl_multifit_robust_free()	608
49.46.1.85	gsl_multifit_robust_maxiter()	609
49.46.1.86	gsl_multifit_robust_name()	609
49.46.1.87	gsl_multifit_robust_residuals()	609
49.46.1.88	gsl_multifit_robust_statistics()	609
49.46.1.89	gsl_multifit_robust_tune()	609
49.46.1.90	gsl_multifit_robust_weights()	609
49.46.1.91	gsl_multifit_test_delta()	610
49.46.1.92	gsl_multifit_test_gradient()	610
49.46.1.93	gsl_multifit_wlinear()	610
49.46.1.94	gsl_multifit_wlinear_svd()	610
49.46.1.95	gsl_multifit_wlinear_tsvd()	611
49.46.1.96	gsl_multifit_wlinear_usvd()	611
49.47	api/multilarge.finc File Reference	611
49.47.1	Function/Subroutine Documentation	612
49.47.1.1	fgsl_multilarge_linear_accumulate()	612
49.47.1.2	fgsl_multilarge_linear_alloc()	612
49.47.1.3	fgsl_multilarge_linear_free()	612
49.47.1.4	fgsl_multilarge_linear_genform1()	612
49.47.1.5	fgsl_multilarge_linear_genform2()	612
49.47.1.6	fgsl_multilarge_linear_l_decomp()	613
49.47.1.7	fgsl_multilarge_linear_lcurve()	613
49.47.1.8	fgsl_multilarge_linear_matrix_ptr()	613
49.47.1.9	fgsl_multilarge_linear_name()	613
49.47.1.10	fgsl_multilarge_linear_rcond()	613

49.47.1.11 fgsl_multilarge_linear_reset()	613
49.47.1.12 fgsl_multilarge_linear_rhs_ptr()	614
49.47.1.13 fgsl_multilarge_linear_solve()	614
49.47.1.14 fgsl_multilarge_linear_stdform1()	614
49.47.1.15 fgsl_multilarge_linear_stdform2()	614
49.47.1.16 fgsl_multilarge_linear_wstdform1()	614
49.47.1.17 fgsl_multilarge_linear_wstdform2()	615
49.48 interface/multilarge.finc File Reference	615
49.48.1 Function/Subroutine Documentation	616
49.48.1.1 fgsl_aux_multilarge_linear_alloc()	616
49.48.1.2 gsl_multilarge_linear_accumulate()	616
49.48.1.3 gsl_multilarge_linear_alloc()	616
49.48.1.4 gsl_multilarge_linear_free()	616
49.48.1.5 gsl_multilarge_linear_genform1()	616
49.48.1.6 gsl_multilarge_linear_genform2()	617
49.48.1.7 gsl_multilarge_linear_l_decomp()	617
49.48.1.8 gsl_multilarge_linear_lcurve()	617
49.48.1.9 gsl_multilarge_linear_matrix_ptr()	617
49.48.1.10 gsl_multilarge_linear_name()	617
49.48.1.11 gsl_multilarge_linear_rcond()	617
49.48.1.12 gsl_multilarge_linear_reset()	618
49.48.1.13 gsl_multilarge_linear_rhs_ptr()	618
49.48.1.14 gsl_multilarge_linear_solve()	618
49.48.1.15 gsl_multilarge_linear_stdform1()	618
49.48.1.16 gsl_multilarge_linear_stdform2()	618
49.48.1.17 gsl_multilarge_linear_wstdform1()	619
49.48.1.18 gsl_multilarge_linear_wstdform2()	619
49.49 api/multimin.finc File Reference	619
49.49.1 Function/Subroutine Documentation	620
49.49.1.1 fgsl_multimin_fdfminimizer_alloc()	620
49.49.1.2 fgsl_multimin_fdfminimizer_free()	620
49.49.1.3 fgsl_multimin_fdfminimizer_gradient()	620
49.49.1.4 fgsl_multimin_fdfminimizer_iterate()	620
49.49.1.5 fgsl_multimin_fdfminimizer_minimum()	620
49.49.1.6 fgsl_multimin_fdfminimizer_name()	620
49.49.1.7 fgsl_multimin_fdfminimizer_restart()	621
49.49.1.8 fgsl_multimin_fdfminimizer_set()	621
49.49.1.9 fgsl_multimin_fdfminimizer_status()	621
49.49.1.10 fgsl_multimin_fdfminimizer_x()	621
49.49.1.11 fgsl_multimin_fminimizer_alloc()	621
49.49.1.12 fgsl_multimin_fminimizer_free()	621
49.49.1.13 fgsl_multimin_fminimizer_iterate()	622

49.49.1.14 fgsl_multimin_fminimizer_minimum()	622
49.49.1.15 fgsl_multimin_fminimizer_name()	622
49.49.1.16 fgsl_multimin_fminimizer_set()	622
49.49.1.17 fgsl_multimin_fminimizer_size()	622
49.49.1.18 fgsl_multimin_fminimizer_status()	622
49.49.1.19 fgsl_multimin_fminimizer_x()	623
49.49.1.20 fgsl_multimin_function_fdf_free()	623
49.49.1.21 fgsl_multimin_function_fdf_init()	623
49.49.1.22 fgsl_multimin_function_free()	623
49.49.1.23 fgsl_multimin_function_init()	623
49.49.1.24 fgsl_multimin_test_gradient()	623
49.49.1.25 fgsl_multimin_test_size()	624
49.50 interface/multimin.finc File Reference	624
49.50.1 Function/Subroutine Documentation	625
49.50.1.1 fgsl_aux_multimin_fdfminimizer_alloc()	625
49.50.1.2 fgsl_aux_multimin_fminimizer_alloc()	625
49.50.1.3 fgsl_multimin_function_cfree()	625
49.50.1.4 fgsl_multimin_function_cinit()	625
49.50.1.5 fgsl_multimin_function_fdf_cfree()	625
49.50.1.6 fgsl_multimin_function_fdf_cinit()	625
49.50.1.7 gsl_multimin_fdfminimizer_alloc()	626
49.50.1.8 gsl_multimin_fdfminimizer_free()	626
49.50.1.9 gsl_multimin_fdfminimizer_gradient()	626
49.50.1.10 gsl_multimin_fdfminimizer_iterate()	626
49.50.1.11 gsl_multimin_fdfminimizer_minimum()	626
49.50.1.12 gsl_multimin_fdfminimizer_name()	626
49.50.1.13 gsl_multimin_fdfminimizer_restart()	626
49.50.1.14 gsl_multimin_fdfminimizer_set()	627
49.50.1.15 gsl_multimin_fdfminimizer_x()	627
49.50.1.16 gsl_multimin_fminimizer_alloc()	627
49.50.1.17 gsl_multimin_fminimizer_free()	627
49.50.1.18 gsl_multimin_fminimizer_iterate()	627
49.50.1.19 gsl_multimin_fminimizer_minimum()	627
49.50.1.20 gsl_multimin_fminimizer_name()	628
49.50.1.21 gsl_multimin_fminimizer_set()	628
49.50.1.22 gsl_multimin_fminimizer_size()	628
49.50.1.23 gsl_multimin_fminimizer_x()	628
49.50.1.24 gsl_multimin_test_gradient()	628
49.50.1.25 gsl_multimin_test_size()	628
49.51 api/multiroots.finc File Reference	629
49.51.1 Function/Subroutine Documentation	629
49.51.1.1 fgsl_multiroot_fdfsolver_alloc()	629

49.51.1.2 fgsl_multiroot_fdfsolver_dx()	629
49.51.1.3 fgsl_multiroot_fdfsolver_f()	630
49.51.1.4 fgsl_multiroot_fdfsolver_free()	630
49.51.1.5 fgsl_multiroot_fdfsolver_iterate()	630
49.51.1.6 fgsl_multiroot_fdfsolver_name()	630
49.51.1.7 fgsl_multiroot_fdfsolver_root()	630
49.51.1.8 fgsl_multiroot_fdfsolver_set()	630
49.51.1.9 fgsl_multiroot_fdfsolver_status()	630
49.51.1.10 fgsl_multiroot_fsolver_alloc()	631
49.51.1.11 fgsl_multiroot_fsolver_dx()	631
49.51.1.12 fgsl_multiroot_fsolver_f()	631
49.51.1.13 fgsl_multiroot_fsolver_free()	631
49.51.1.14 fgsl_multiroot_fsolver_iterate()	631
49.51.1.15 fgsl_multiroot_fsolver_name()	631
49.51.1.16 fgsl_multiroot_fsolver_root()	631
49.51.1.17 fgsl_multiroot_fsolver_set()	632
49.51.1.18 fgsl_multiroot_fsolver_status()	632
49.51.1.19 fgsl_multiroot_function_fdf_free()	632
49.51.1.20 fgsl_multiroot_function_fdf_init()	632
49.51.1.21 fgsl_multiroot_function_free()	632
49.51.1.22 fgsl_multiroot_function_init()	632
49.51.1.23 fgsl_multiroot_test_delta()	633
49.51.1.24 fgsl_multiroot_test_residual()	633
49.52 interface/multiroots.finc File Reference	633
49.52.1 Function/Subroutine Documentation	634
49.52.1.1 fgsl_aux_multiroot_fdfsolver_alloc()	634
49.52.1.2 fgsl_aux_multiroot_fsolver_alloc()	634
49.52.1.3 fgsl_multiroot_function_cfree()	634
49.52.1.4 fgsl_multiroot_function_cinit()	634
49.52.1.5 fgsl_multiroot_function_fdf_cfree()	635
49.52.1.6 fgsl_multiroot_function_fdf_cinit()	635
49.52.1.7 gsl_multiroot_fdfsolver_alloc()	635
49.52.1.8 gsl_multiroot_fdfsolver_dx()	635
49.52.1.9 gsl_multiroot_fdfsolver_f()	635
49.52.1.10 gsl_multiroot_fdfsolver_free()	635
49.52.1.11 gsl_multiroot_fdfsolver_iterate()	636
49.52.1.12 gsl_multiroot_fdfsolver_name()	636
49.52.1.13 gsl_multiroot_fdfsolver_root()	636
49.52.1.14 gsl_multiroot_fdfsolver_set()	636
49.52.1.15 gsl_multiroot_fsolver_alloc()	636
49.52.1.16 gsl_multiroot_fsolver_dx()	636
49.52.1.17 gsl_multiroot_fsolver_f()	637

49.52.1.18	<code>gsl_multiroot_fsolver_free()</code>	637
49.52.1.19	<code>gsl_multiroot_fsolver_iterate()</code>	637
49.52.1.20	<code>gsl_multiroot_fsolver_name()</code>	637
49.52.1.21	<code>gsl_multiroot_fsolver_root()</code>	637
49.52.1.22	<code>gsl_multiroot_fsolver_set()</code>	637
49.52.1.23	<code>gsl_multiroot_test_delta()</code>	638
49.52.1.24	<code>gsl_multiroot_test_residual()</code>	638
49.53	<code>api/nlfit.finc</code> File Reference	638
49.53.1	Function/Subroutine Documentation	639
49.53.1.1	<code>fgsl_multifit_nlinear_alloc()</code>	639
49.53.1.2	<code>fgsl_multifit_nlinear_covar()</code>	639
49.53.1.3	<code>fgsl_multifit_nlinear_default_parameters()</code>	639
49.53.1.4	<code>fgsl_multifit_nlinear_driver()</code>	640
49.53.1.5	<code>fgsl_multifit_nlinear_fdf_free()</code>	640
49.53.1.6	<code>fgsl_multifit_nlinear_fdf_get()</code>	640
49.53.1.7	<code>fgsl_multifit_nlinear_fdf_init()</code>	640
49.53.1.8	<code>fgsl_multifit_nlinear_free()</code>	641
49.53.1.9	<code>fgsl_multifit_nlinear_init()</code>	641
49.53.1.10	<code>fgsl_multifit_nlinear_iterate()</code>	641
49.53.1.11	<code>fgsl_multifit_nlinear_jac()</code>	641
49.53.1.12	<code>fgsl_multifit_nlinear_name()</code>	641
49.53.1.13	<code>fgsl_multifit_nlinear_niter()</code>	641
49.53.1.14	<code>fgsl_multifit_nlinear_parameters_set()</code>	642
49.53.1.15	<code>fgsl_multifit_nlinear_position()</code>	642
49.53.1.16	<code>fgsl_multifit_nlinear_rcond()</code>	642
49.53.1.17	<code>fgsl_multifit_nlinear_residual()</code>	642
49.53.1.18	<code>fgsl_multifit_nlinear_setup()</code>	642
49.53.1.19	<code>fgsl_multifit_nlinear_status()</code>	642
49.53.1.20	<code>fgsl_multifit_nlinear_test()</code>	643
49.53.1.21	<code>fgsl_multifit_nlinear_trs_name()</code>	643
49.53.1.22	<code>fgsl_multifit_nlinear_winit()</code>	643
49.53.1.23	<code>fgsl_multilarge_nlinear_alloc()</code>	643
49.53.1.24	<code>fgsl_multilarge_nlinear_covar()</code>	643
49.53.1.25	<code>fgsl_multilarge_nlinear_default_parameters()</code>	643
49.53.1.26	<code>fgsl_multilarge_nlinear_driver()</code>	644
49.53.1.27	<code>fgsl_multilarge_nlinear_fdf_free()</code>	644
49.53.1.28	<code>fgsl_multilarge_nlinear_fdf_get()</code>	644
49.53.1.29	<code>fgsl_multilarge_nlinear_fdf_init()</code>	644
49.53.1.30	<code>fgsl_multilarge_nlinear_free()</code>	645
49.53.1.31	<code>fgsl_multilarge_nlinear_init()</code>	645
49.53.1.32	<code>fgsl_multilarge_nlinear_iterate()</code>	645
49.53.1.33	<code>fgsl_multilarge_nlinear_name()</code>	645

49.53.1.34 fgsl_multilarge_nlinear_niter()	645
49.53.1.35 fgsl_multilarge_nlinear_parameters_set()	645
49.53.1.36 fgsl_multilarge_nlinear_position()	646
49.53.1.37 fgsl_multilarge_nlinear_rcond()	646
49.53.1.38 fgsl_multilarge_nlinear_residual()	646
49.53.1.39 fgsl_multilarge_nlinear_setup()	646
49.53.1.40 fgsl_multilarge_nlinear_test()	646
49.53.1.41 fgsl_multilarge_nlinear_trs_name()	646
49.53.1.42 fgsl_multilarge_nlinear_winit()	647
49.54 interface/nlfit.finc File Reference	647
49.54.1 Function/Subroutine Documentation	648
49.54.1.1 fgsl_multifit_nlinear_fdf_cfree()	648
49.54.1.2 fgsl_multifit_nlinear_fdf_cinit()	648
49.54.1.3 fgsl_multilarge_nlinear_fdf_cfree()	649
49.54.1.4 fgsl_multilarge_nlinear_fdf_cinit()	649
49.54.1.5 gsl_multifit_nlinear_alloc()	649
49.54.1.6 gsl_multifit_nlinear_covar()	649
49.54.1.7 gsl_multifit_nlinear_default_parameters()	649
49.54.1.8 gsl_multifit_nlinear_driver()	650
49.54.1.9 gsl_multifit_nlinear_fdf_get()	650
49.54.1.10 gsl_multifit_nlinear_free()	650
49.54.1.11 gsl_multifit_nlinear_get_scale()	650
49.54.1.12 gsl_multifit_nlinear_get_solver()	650
49.54.1.13 gsl_multifit_nlinear_get_trs()	651
49.54.1.14 gsl_multifit_nlinear_init()	651
49.54.1.15 gsl_multifit_nlinear_iterate()	651
49.54.1.16 gsl_multifit_nlinear_jac()	651
49.54.1.17 gsl_multifit_nlinear_name()	651
49.54.1.18 gsl_multifit_nlinear_niter()	651
49.54.1.19 gsl_multifit_nlinear_position()	651
49.54.1.20 gsl_multifit_nlinear_rcond()	652
49.54.1.21 gsl_multifit_nlinear_residual()	652
49.54.1.22 gsl_multifit_nlinear_setup()	652
49.54.1.23 gsl_multifit_nlinear_test()	652
49.54.1.24 gsl_multifit_nlinear_trs_name()	652
49.54.1.25 gsl_multifit_nlinear_winit()	652
49.54.1.26 gsl_multilarge_nlinear_alloc()	653
49.54.1.27 gsl_multilarge_nlinear_covar()	653
49.54.1.28 gsl_multilarge_nlinear_default_parameters()	653
49.54.1.29 gsl_multilarge_nlinear_driver()	653
49.54.1.30 gsl_multilarge_nlinear_fdf_get()	653
49.54.1.31 gsl_multilarge_nlinear_free()	654

49.54.1.32	gsl_multilarge_nlinear_get_scale()	654
49.54.1.33	gsl_multilarge_nlinear_get_solver()	654
49.54.1.34	gsl_multilarge_nlinear_get_trs()	654
49.54.1.35	gsl_multilarge_nlinear_init()	654
49.54.1.36	gsl_multilarge_nlinear_iterate()	654
49.54.1.37	gsl_multilarge_nlinear_name()	654
49.54.1.38	gsl_multilarge_nlinear_niter()	655
49.54.1.39	gsl_multilarge_nlinear_position()	655
49.54.1.40	gsl_multilarge_nlinear_rcond()	655
49.54.1.41	gsl_multilarge_nlinear_residual()	655
49.54.1.42	gsl_multilarge_nlinear_setup()	655
49.54.1.43	gsl_multilarge_nlinear_test()	655
49.54.1.44	gsl_multilarge_nlinear_trs_name()	656
49.54.1.45	gsl_multilarge_nlinear_winit()	656
49.55	api/ntuple.finc File Reference	656
49.55.1	Function/Subroutine Documentation	656
49.55.1.1	fgsl_ntuple_bookdata()	656
49.55.1.2	fgsl_ntuple_close()	657
49.55.1.3	fgsl_ntuple_create()	657
49.55.1.4	fgsl_ntuple_data()	657
49.55.1.5	fgsl_ntuple_open()	657
49.55.1.6	fgsl_ntuple_project()	657
49.55.1.7	fgsl_ntuple_read()	657
49.55.1.8	fgsl_ntuple_select_fn_free()	658
49.55.1.9	fgsl_ntuple_select_fn_init()	658
49.55.1.10	fgsl_ntuple_select_fn_status()	658
49.55.1.11	fgsl_ntuple_size()	658
49.55.1.12	fgsl_ntuple_status()	658
49.55.1.13	fgsl_ntuple_value_fn_free()	658
49.55.1.14	fgsl_ntuple_value_fn_init()	658
49.55.1.15	fgsl_ntuple_value_fn_status()	659
49.55.1.16	fgsl_ntuple_write()	659
49.56	interface/ntuple.finc File Reference	659
49.56.1	Function/Subroutine Documentation	659
49.56.1.1	fgsl_aux_ntuple_data()	660
49.56.1.2	fgsl_aux_ntuple_size()	660
49.56.1.3	fgsl_ntuple_select_fn_cfree()	660
49.56.1.4	fgsl_ntuple_select_fn_cinit()	660
49.56.1.5	fgsl_ntuple_value_fn_cfree()	660
49.56.1.6	fgsl_ntuple_value_fn_cinit()	660
49.56.1.7	gsl_ntuple_close()	660
49.56.1.8	gsl_ntuple_create()	661

49.56.1.9	gsl_ntuple_open()	661
49.56.1.10	gsl_ntuple_project()	661
49.56.1.11	gsl_ntuple_read()	661
49.56.1.12	gsl_ntuple_write()	661
49.57	api/ode.finc File Reference	662
49.57.1	Function/Subroutine Documentation	663
49.57.1.1	fgsl_odeiv2_control_alloc()	663
49.57.1.2	fgsl_odeiv2_control_errlevel()	663
49.57.1.3	fgsl_odeiv2_control_free()	664
49.57.1.4	fgsl_odeiv2_control_hadjust()	664
49.57.1.5	fgsl_odeiv2_control_init()	664
49.57.1.6	fgsl_odeiv2_control_name()	664
49.57.1.7	fgsl_odeiv2_control_scaled_new()	664
49.57.1.8	fgsl_odeiv2_control_set_driver()	665
49.57.1.9	fgsl_odeiv2_control_standard_new()	665
49.57.1.10	fgsl_odeiv2_control_status()	665
49.57.1.11	fgsl_odeiv2_control_y_new()	665
49.57.1.12	fgsl_odeiv2_control_yp_new()	665
49.57.1.13	fgsl_odeiv2_driver_alloc_scaled_new()	665
49.57.1.14	fgsl_odeiv2_driver_alloc_standard_new()	666
49.57.1.15	fgsl_odeiv2_driver_alloc_y_new()	666
49.57.1.16	fgsl_odeiv2_driver_alloc_yp_new()	666
49.57.1.17	fgsl_odeiv2_driver_apply()	666
49.57.1.18	fgsl_odeiv2_driver_apply_fixed_step()	666
49.57.1.19	fgsl_odeiv2_driver_free()	667
49.57.1.20	fgsl_odeiv2_driver_reset()	667
49.57.1.21	fgsl_odeiv2_driver_reset_hstart()	667
49.57.1.22	fgsl_odeiv2_driver_set_hmax()	667
49.57.1.23	fgsl_odeiv2_driver_set_hmin()	667
49.57.1.24	fgsl_odeiv2_driver_set_nmax()	667
49.57.1.25	fgsl_odeiv2_driver_status()	668
49.57.1.26	fgsl_odeiv2_evolve_alloc()	668
49.57.1.27	fgsl_odeiv2_evolve_apply()	668
49.57.1.28	fgsl_odeiv2_evolve_apply_fixed_step()	668
49.57.1.29	fgsl_odeiv2_evolve_free()	668
49.57.1.30	fgsl_odeiv2_evolve_reset()	669
49.57.1.31	fgsl_odeiv2_evolve_set_driver()	669
49.57.1.32	fgsl_odeiv2_evolve_status()	669
49.57.1.33	fgsl_odeiv2_step_alloc()	669
49.57.1.34	fgsl_odeiv2_step_apply()	669
49.57.1.35	fgsl_odeiv2_step_free()	669
49.57.1.36	fgsl_odeiv2_step_name()	670

49.57.1.37 fgsl_odeiv2_step_order()	670
49.57.1.38 fgsl_odeiv2_step_reset()	670
49.57.1.39 fgsl_odeiv2_step_set_driver()	670
49.57.1.40 fgsl_odeiv2_step_status()	670
49.57.1.41 fgsl_odeiv2_system_free()	670
49.57.1.42 fgsl_odeiv2_system_init()	670
49.57.1.43 fgsl_odeiv2_system_status()	671
49.57.1.44 fgsl_odeiv_control_alloc()	671
49.57.1.45 fgsl_odeiv_control_free()	671
49.57.1.46 fgsl_odeiv_control_hadjust()	671
49.57.1.47 fgsl_odeiv_control_init()	672
49.57.1.48 fgsl_odeiv_control_name()	672
49.57.1.49 fgsl_odeiv_control_scaled_new()	672
49.57.1.50 fgsl_odeiv_control_standard_new()	672
49.57.1.51 fgsl_odeiv_control_status()	672
49.57.1.52 fgsl_odeiv_control_y_new()	673
49.57.1.53 fgsl_odeiv_control_yp_new()	673
49.57.1.54 fgsl_odeiv_evolve_alloc()	673
49.57.1.55 fgsl_odeiv_evolve_apply()	673
49.57.1.56 fgsl_odeiv_evolve_free()	673
49.57.1.57 fgsl_odeiv_evolve_reset()	673
49.57.1.58 fgsl_odeiv_evolve_status()	674
49.57.1.59 fgsl_odeiv_step_alloc()	674
49.57.1.60 fgsl_odeiv_step_apply()	674
49.57.1.61 fgsl_odeiv_step_free()	674
49.57.1.62 fgsl_odeiv_step_name()	674
49.57.1.63 fgsl_odeiv_step_order()	674
49.57.1.64 fgsl_odeiv_step_reset()	675
49.57.1.65 fgsl_odeiv_step_status()	675
49.57.1.66 fgsl_odeiv_system_free()	675
49.57.1.67 fgsl_odeiv_system_init()	675
49.57.1.68 fgsl_odeiv_system_status()	675
49.58 interface/ode.finc File Reference	676
49.58.1 Function/Subroutine Documentation	677
49.58.1.1 fgsl_aux_odeiv2_step_alloc()	677
49.58.1.2 fgsl_aux_odeiv_step_alloc()	677
49.58.1.3 fgsl_odeiv2_system_cfree()	678
49.58.1.4 fgsl_odeiv2_system_cinit()	678
49.58.1.5 fgsl_odeiv_system_cfree()	678
49.58.1.6 fgsl_odeiv_system_cinit()	678
49.58.1.7 fgsl_odeiv2_control_alloc()	678
49.58.1.8 fgsl_odeiv2_control_errlevel()	678

49.58.1.9	<code>gsl_odeiv2_control_free()</code>	679
49.58.1.10	<code>gsl_odeiv2_control_hadjust()</code>	679
49.58.1.11	<code>gsl_odeiv2_control_init()</code>	679
49.58.1.12	<code>gsl_odeiv2_control_name()</code>	679
49.58.1.13	<code>gsl_odeiv2_control_scaled_new()</code>	679
49.58.1.14	<code>gsl_odeiv2_control_set_driver()</code>	680
49.58.1.15	<code>gsl_odeiv2_control_standard_new()</code>	680
49.58.1.16	<code>gsl_odeiv2_control_y_new()</code>	680
49.58.1.17	<code>gsl_odeiv2_control_yp_new()</code>	680
49.58.1.18	<code>gsl_odeiv2_driver_alloc_scaled_new()</code>	680
49.58.1.19	<code>gsl_odeiv2_driver_alloc_standard_new()</code>	681
49.58.1.20	<code>gsl_odeiv2_driver_alloc_y_new()</code>	681
49.58.1.21	<code>gsl_odeiv2_driver_alloc_yp_new()</code>	681
49.58.1.22	<code>gsl_odeiv2_driver_apply()</code>	681
49.58.1.23	<code>gsl_odeiv2_driver_apply_fixed_step()</code>	681
49.58.1.24	<code>gsl_odeiv2_driver_free()</code>	682
49.58.1.25	<code>gsl_odeiv2_driver_reset()</code>	682
49.58.1.26	<code>gsl_odeiv2_driver_reset_hstart()</code>	682
49.58.1.27	<code>gsl_odeiv2_driver_set_hmax()</code>	682
49.58.1.28	<code>gsl_odeiv2_driver_set_hmin()</code>	682
49.58.1.29	<code>gsl_odeiv2_driver_set_nmax()</code>	682
49.58.1.30	<code>gsl_odeiv2_evolve_alloc()</code>	683
49.58.1.31	<code>gsl_odeiv2_evolve_apply()</code>	683
49.58.1.32	<code>gsl_odeiv2_evolve_apply_fixed_step()</code>	683
49.58.1.33	<code>gsl_odeiv2_evolve_free()</code>	683
49.58.1.34	<code>gsl_odeiv2_evolve_reset()</code>	683
49.58.1.35	<code>gsl_odeiv2_evolve_set_driver()</code>	684
49.58.1.36	<code>gsl_odeiv2_step_alloc()</code>	684
49.58.1.37	<code>gsl_odeiv2_step_apply()</code>	684
49.58.1.38	<code>gsl_odeiv2_step_free()</code>	684
49.58.1.39	<code>gsl_odeiv2_step_name()</code>	684
49.58.1.40	<code>gsl_odeiv2_step_order()</code>	684
49.58.1.41	<code>gsl_odeiv2_step_reset()</code>	685
49.58.1.42	<code>gsl_odeiv2_step_set_driver()</code>	685
49.58.1.43	<code>gsl_odeiv_control_alloc()</code>	685
49.58.1.44	<code>gsl_odeiv_control_free()</code>	685
49.58.1.45	<code>gsl_odeiv_control_hadjust()</code>	685
49.58.1.46	<code>gsl_odeiv_control_init()</code>	685
49.58.1.47	<code>gsl_odeiv_control_name()</code>	686
49.58.1.48	<code>gsl_odeiv_control_scaled_new()</code>	686
49.58.1.49	<code>gsl_odeiv_control_standard_new()</code>	686
49.58.1.50	<code>gsl_odeiv_control_y_new()</code>	686

49.58.1.51 gsl_odeiv_control_yp_new()	686
49.58.1.52 gsl_odeiv_evolve_alloc()	686
49.58.1.53 gsl_odeiv_evolve_apply()	687
49.58.1.54 gsl_odeiv_evolve_free()	687
49.58.1.55 gsl_odeiv_evolve_reset()	687
49.58.1.56 gsl_odeiv_step_alloc()	687
49.58.1.57 gsl_odeiv_step_apply()	687
49.58.1.58 gsl_odeiv_step_free()	688
49.58.1.59 gsl_odeiv_step_name()	688
49.58.1.60 gsl_odeiv_step_order()	688
49.58.1.61 gsl_odeiv_step_reset()	688
49.59 api/permutation.finc File Reference	688
49.59.1 Function/Subroutine Documentation	690
49.59.1.1 fgsl_combination_alloc()	690
49.59.1.2 fgsl_combination_calloc()	690
49.59.1.3 fgsl_combination_data()	690
49.59.1.4 fgsl_combination_fprintf()	690
49.59.1.5 fgsl_combination_fread()	690
49.59.1.6 fgsl_combination_free()	690
49.59.1.7 fgsl_combination_fscanf()	691
49.59.1.8 fgsl_combination_fwrite()	691
49.59.1.9 fgsl_combination_get()	691
49.59.1.10 fgsl_combination_init_first()	691
49.59.1.11 fgsl_combination_init_last()	691
49.59.1.12 fgsl_combination_k()	691
49.59.1.13 fgsl_combination_memcpy()	692
49.59.1.14 fgsl_combination_n()	692
49.59.1.15 fgsl_combination_next()	692
49.59.1.16 fgsl_combination_prev()	692
49.59.1.17 fgsl_combination_status()	692
49.59.1.18 fgsl_combination_valid()	692
49.59.1.19 fgsl_multiset_alloc()	692
49.59.1.20 fgsl_multiset_calloc()	693
49.59.1.21 fgsl_multiset_data()	693
49.59.1.22 fgsl_multiset_fprintf()	693
49.59.1.23 fgsl_multiset_fread()	693
49.59.1.24 fgsl_multiset_free()	693
49.59.1.25 fgsl_multiset_fscanf()	693
49.59.1.26 fgsl_multiset_fwrite()	694
49.59.1.27 fgsl_multiset_get()	694
49.59.1.28 fgsl_multiset_init_first()	694
49.59.1.29 fgsl_multiset_init_last()	694

49.59.1.30 fgsl_multiset_k()	694
49.59.1.31 fgsl_multiset_memcpy()	694
49.59.1.32 fgsl_multiset_n()	695
49.59.1.33 fgsl_multiset_next()	695
49.59.1.34 fgsl_multiset_prev()	695
49.59.1.35 fgsl_multiset_status()	695
49.59.1.36 fgsl_multiset_valid()	695
49.59.1.37 fgsl_permutation_alloc()	695
49.59.1.38 fgsl_permutation_calloc()	695
49.59.1.39 fgsl_permutation_canonical_cycles()	696
49.59.1.40 fgsl_permutation_canonical_to_linear()	696
49.59.1.41 fgsl_permutation_data()	696
49.59.1.42 fgsl_permutation_fprintf()	696
49.59.1.43 fgsl_permutation_fread()	696
49.59.1.44 fgsl_permutation_free()	696
49.59.1.45 fgsl_permutation_fscanf()	697
49.59.1.46 fgsl_permutation_fwrite()	697
49.59.1.47 fgsl_permutation_get()	697
49.59.1.48 fgsl_permutation_init()	697
49.59.1.49 fgsl_permutation_inverse()	697
49.59.1.50 fgsl_permutation_inversions()	697
49.59.1.51 fgsl_permutation_linear_cycles()	698
49.59.1.52 fgsl_permutation_linear_to_canonical()	698
49.59.1.53 fgsl_permutation_memcpy()	698
49.59.1.54 fgsl_permutation_mul()	698
49.59.1.55 fgsl_permutation_next()	698
49.59.1.56 fgsl_permutation_prev()	698
49.59.1.57 fgsl_permutation_reverse()	699
49.59.1.58 fgsl_permutation_size()	699
49.59.1.59 fgsl_permutation_status()	699
49.59.1.60 fgsl_permutation_swap()	699
49.59.1.61 fgsl_permutation_valid()	699
49.59.1.62 fgsl_permute()	699
49.59.1.63 fgsl_permute_inverse()	700
49.59.1.64 fgsl_permute_long()	700
49.59.1.65 fgsl_permute_long_inverse()	700
49.59.1.66 fgsl_permute_matrix()	700
49.59.1.67 fgsl_permute_vector()	700
49.59.1.68 fgsl_permute_vector_inverse()	701
49.59.1.69 fgsl_sizeof_combination()	701
49.59.1.70 fgsl_sizeof_multiset()	701
49.59.1.71 fgsl_sizeof_permutation()	701

49.60 interface/permutation.finc File Reference	701
49.60.1 Function/Subroutine Documentation	703
49.60.1.1 gsl_aux_sizeof_combination()	703
49.60.1.2 gsl_aux_sizeof_multiset()	703
49.60.1.3 gsl_aux_sizeof_permutation()	703
49.60.1.4 gsl_combination_alloc()	703
49.60.1.5 gsl_combination_calloc()	704
49.60.1.6 gsl_combination_data()	704
49.60.1.7 gsl_combination_fprintf()	704
49.60.1.8 gsl_combination_fread()	704
49.60.1.9 gsl_combination_free()	704
49.60.1.10 gsl_combination_fscanf()	704
49.60.1.11 gsl_combination_fwrite()	705
49.60.1.12 gsl_combination_get()	705
49.60.1.13 gsl_combination_init_first()	705
49.60.1.14 gsl_combination_init_last()	705
49.60.1.15 gsl_combination_k()	705
49.60.1.16 gsl_combination_memcpy()	705
49.60.1.17 gsl_combination_n()	706
49.60.1.18 gsl_combination_next()	706
49.60.1.19 gsl_combination_prev()	706
49.60.1.20 gsl_combination_valid()	706
49.60.1.21 gsl_multiset_alloc()	706
49.60.1.22 gsl_multiset_calloc()	706
49.60.1.23 gsl_multiset_data()	706
49.60.1.24 gsl_multiset_fprintf()	707
49.60.1.25 gsl_multiset_fread()	707
49.60.1.26 gsl_multiset_free()	707
49.60.1.27 gsl_multiset_fscanf()	707
49.60.1.28 gsl_multiset_fwrite()	707
49.60.1.29 gsl_multiset_get()	707
49.60.1.30 gsl_multiset_init_first()	708
49.60.1.31 gsl_multiset_init_last()	708
49.60.1.32 gsl_multiset_k()	708
49.60.1.33 gsl_multiset_memcpy()	708
49.60.1.34 gsl_multiset_n()	708
49.60.1.35 gsl_multiset_next()	708
49.60.1.36 gsl_multiset_prev()	708
49.60.1.37 gsl_multiset_valid()	709
49.60.1.38 gsl_permutation_alloc()	709
49.60.1.39 gsl_permutation_calloc()	709
49.60.1.40 gsl_permutation_canonical_cycles()	709

49.60.1.41	gsl_permutation_canonical_to_linear()	709
49.60.1.42	gsl_permutation_data()	709
49.60.1.43	gsl_permutation_fprintf()	709
49.60.1.44	gsl_permutation_fread()	710
49.60.1.45	gsl_permutation_free()	710
49.60.1.46	gsl_permutation_fscanf()	710
49.60.1.47	gsl_permutation_fwrite()	710
49.60.1.48	gsl_permutation_get()	710
49.60.1.49	gsl_permutation_init()	710
49.60.1.50	gsl_permutation_inverse()	711
49.60.1.51	gsl_permutation_inversions()	711
49.60.1.52	gsl_permutation_linear_cycles()	711
49.60.1.53	gsl_permutation_linear_to_canonical()	711
49.60.1.54	gsl_permutation_memcpy()	711
49.60.1.55	gsl_permutation_mul()	711
49.60.1.56	gsl_permutation_next()	712
49.60.1.57	gsl_permutation_prev()	712
49.60.1.58	gsl_permutation_reverse()	712
49.60.1.59	gsl_permutation_size()	712
49.60.1.60	gsl_permutation_swap()	712
49.60.1.61	gsl_permutation_valid()	712
49.60.1.62	gsl_permute()	713
49.60.1.63	gsl_permute_inverse()	713
49.60.1.64	gsl_permute_long()	713
49.60.1.65	gsl_permute_long_inverse()	713
49.60.1.66	gsl_permute_matrix()	713
49.60.1.67	gsl_permute_vector()	714
49.60.1.68	gsl_permute_vector_inverse()	714
49.61	api/poly.finc File Reference	714
49.61.1	Function/Subroutine Documentation	715
49.61.1.1	fgsl_complex_poly_complex_eval()	715
49.61.1.2	fgsl_poly_complex_eval()	715
49.61.1.3	fgsl_poly_complex_solve()	715
49.61.1.4	fgsl_poly_complex_solve_cubic()	715
49.61.1.5	fgsl_poly_complex_solve_quadratic()	715
49.61.1.6	fgsl_poly_complex_workspace_alloc()	716
49.61.1.7	fgsl_poly_complex_workspace_free()	716
49.61.1.8	fgsl_poly_complex_workspace_stat()	716
49.61.1.9	fgsl_poly_dd_eval()	716
49.61.1.10	fgsl_poly_dd_hermite_init()	716
49.61.1.11	fgsl_poly_dd_init()	716
49.61.1.12	fgsl_poly_dd_taylor()	717

49.61.1.13 fgsl_poly_eval()	717
49.61.1.14 fgsl_poly_eval_derivs()	717
49.61.1.15 fgsl_poly_solve_cubic()	717
49.61.1.16 fgsl_poly_solve_quadratic()	717
49.62 interface/poly.finc File Reference	718
49.62.1 Function/Subroutine Documentation	718
49.62.1.1 gsl_complex_poly_complex_eval()	718
49.62.1.2 gsl_poly_complex_eval()	719
49.62.1.3 gsl_poly_complex_solve()	719
49.62.1.4 gsl_poly_complex_solve_cubic()	719
49.62.1.5 gsl_poly_complex_solve_quadratic()	719
49.62.1.6 gsl_poly_complex_workspace_alloc()	719
49.62.1.7 gsl_poly_complex_workspace_free()	720
49.62.1.8 gsl_poly_dd_eval()	720
49.62.1.9 gsl_poly_dd_hermite_init()	720
49.62.1.10 gsl_poly_dd_init()	720
49.62.1.11 gsl_poly_dd_taylor()	720
49.62.1.12 gsl_poly_eval()	721
49.62.1.13 gsl_poly_eval_derivs()	721
49.62.1.14 gsl_poly_solve_cubic()	721
49.62.1.15 gsl_poly_solve_quadratic()	721
49.63 api/rng.finc File Reference	721
49.63.1 Function/Subroutine Documentation	725
49.63.1.1 fgsl_cdf_beta_p()	725
49.63.1.2 fgsl_cdf_beta_pinv()	726
49.63.1.3 fgsl_cdf_beta_q()	726
49.63.1.4 fgsl_cdf_beta_qinv()	726
49.63.1.5 fgsl_cdf_binomial_p()	726
49.63.1.6 fgsl_cdf_binomial_q()	726
49.63.1.7 fgsl_cdf_cauchy_p()	726
49.63.1.8 fgsl_cdf_cauchy_pinv()	727
49.63.1.9 fgsl_cdf_cauchy_q()	727
49.63.1.10 fgsl_cdf_cauchy_qinv()	727
49.63.1.11 fgsl_cdf_chisq_p()	727
49.63.1.12 fgsl_cdf_chisq_pinv()	727
49.63.1.13 fgsl_cdf_chisq_q()	727
49.63.1.14 fgsl_cdf_chisq_qinv()	728
49.63.1.15 fgsl_cdf_exponential_p()	728
49.63.1.16 fgsl_cdf_exponential_pinv()	728
49.63.1.17 fgsl_cdf_exponential_q()	728
49.63.1.18 fgsl_cdf_exponential_qinv()	728
49.63.1.19 fgsl_cdf_exppow_p()	728

49.63.1.20 fgsl_cdf_exppow_q()	729
49.63.1.21 fgsl_cdf_fdist_p()	729
49.63.1.22 fgsl_cdf_fdist_pinv()	729
49.63.1.23 fgsl_cdf_fdist_q()	729
49.63.1.24 fgsl_cdf_fdist_qinv()	729
49.63.1.25 fgsl_cdf_flat_p()	729
49.63.1.26 fgsl_cdf_flat_pinv()	730
49.63.1.27 fgsl_cdf_flat_q()	730
49.63.1.28 fgsl_cdf_flat_qinv()	730
49.63.1.29 fgsl_cdf_gamma_p()	730
49.63.1.30 fgsl_cdf_gamma_pinv()	730
49.63.1.31 fgsl_cdf_gamma_q()	730
49.63.1.32 fgsl_cdf_gamma_qinv()	731
49.63.1.33 fgsl_cdf_gaussian_p()	731
49.63.1.34 fgsl_cdf_gaussian_pinv()	731
49.63.1.35 fgsl_cdf_gaussian_q()	731
49.63.1.36 fgsl_cdf_gaussian_qinv()	731
49.63.1.37 fgsl_cdf_geometric_p()	731
49.63.1.38 fgsl_cdf_geometric_q()	732
49.63.1.39 fgsl_cdf_gumbel1_p()	732
49.63.1.40 fgsl_cdf_gumbel1_pinv()	732
49.63.1.41 fgsl_cdf_gumbel1_q()	732
49.63.1.42 fgsl_cdf_gumbel1_qinv()	732
49.63.1.43 fgsl_cdf_gumbel2_p()	732
49.63.1.44 fgsl_cdf_gumbel2_pinv()	733
49.63.1.45 fgsl_cdf_gumbel2_q()	733
49.63.1.46 fgsl_cdf_gumbel2_qinv()	733
49.63.1.47 fgsl_cdf_hypergeometric_p()	733
49.63.1.48 fgsl_cdf_hypergeometric_q()	733
49.63.1.49 fgsl_cdf_laplace_p()	734
49.63.1.50 fgsl_cdf_laplace_pinv()	734
49.63.1.51 fgsl_cdf_laplace_q()	734
49.63.1.52 fgsl_cdf_laplace_qinv()	734
49.63.1.53 fgsl_cdf_logistic_p()	734
49.63.1.54 fgsl_cdf_logistic_pinv()	734
49.63.1.55 fgsl_cdf_logistic_q()	735
49.63.1.56 fgsl_cdf_logistic_qinv()	735
49.63.1.57 fgsl_cdf_lognormal_p()	735
49.63.1.58 fgsl_cdf_lognormal_pinv()	735
49.63.1.59 fgsl_cdf_lognormal_q()	735
49.63.1.60 fgsl_cdf_lognormal_qinv()	735
49.63.1.61 fgsl_cdf_negative_binomial_p()	736

49.63.1.62 fgsl_cdf_negative_binomial_q()	736
49.63.1.63 fgsl_cdf_pareto_p()	736
49.63.1.64 fgsl_cdf_pareto_pinv()	736
49.63.1.65 fgsl_cdf_pareto_q()	736
49.63.1.66 fgsl_cdf_pareto_qinv()	736
49.63.1.67 fgsl_cdf_pascal_p()	737
49.63.1.68 fgsl_cdf_pascal_q()	737
49.63.1.69 fgsl_cdf_poisson_p()	737
49.63.1.70 fgsl_cdf_poisson_q()	737
49.63.1.71 fgsl_cdf_rayleigh_p()	737
49.63.1.72 fgsl_cdf_rayleigh_pinv()	737
49.63.1.73 fgsl_cdf_rayleigh_q()	738
49.63.1.74 fgsl_cdf_rayleigh_qinv()	738
49.63.1.75 fgsl_cdf_tdist_p()	738
49.63.1.76 fgsl_cdf_tdist_pinv()	738
49.63.1.77 fgsl_cdf_tdist_q()	738
49.63.1.78 fgsl_cdf_tdist_qinv()	738
49.63.1.79 fgsl_cdf_ugaussian_p()	739
49.63.1.80 fgsl_cdf_ugaussian_pinv()	739
49.63.1.81 fgsl_cdf_ugaussian_q()	739
49.63.1.82 fgsl_cdf_ugaussian_qinv()	739
49.63.1.83 fgsl_cdf_weibull_p()	739
49.63.1.84 fgsl_cdf_weibull_pinv()	739
49.63.1.85 fgsl_cdf_weibull_q()	740
49.63.1.86 fgsl_cdf_weibull_qinv()	740
49.63.1.87 fgsl_qrng_alloc()	740
49.63.1.88 fgsl_qrng_clone()	740
49.63.1.89 fgsl_qrng_free()	740
49.63.1.90 fgsl_qrng_get()	740
49.63.1.91 fgsl_qrng_init()	741
49.63.1.92 fgsl_qrng_memcpy()	741
49.63.1.93 fgsl_qrng_name()	741
49.63.1.94 fgsl_qrng_status()	741
49.63.1.95 fgsl_ran_bernoulli()	741
49.63.1.96 fgsl_ran_bernoulli_pdf()	741
49.63.1.97 fgsl_ran_beta()	742
49.63.1.98 fgsl_ran_beta_pdf()	742
49.63.1.99 fgsl_ran_binomial()	742
49.63.1.100 fgsl_ran_binomial_pdf()	742
49.63.1.101 fgsl_ran_bivariate_gaussian()	742
49.63.1.102 fgsl_ran_bivariate_gaussian_pdf()	743
49.63.1.103 fgsl_ran_cauchy()	743

49.63.1.104 fgsl_ran_cauchy_pdf()	743
49.63.1.105 fgsl_ran_chisq()	743
49.63.1.106 fgsl_ran_chisq_pdf()	743
49.63.1.107 fgsl_ran_choose()	743
49.63.1.108 fgsl_ran_dir_2d()	744
49.63.1.109 fgsl_ran_dir_2d_trig_method()	744
49.63.1.110 fgsl_ran_dir_3d()	744
49.63.1.111 fgsl_ran_dir_nd()	744
49.63.1.112 fgsl_ran_dirichlet()	744
49.63.1.113 fgsl_ran_dirichlet_lnpdf()	745
49.63.1.114 fgsl_ran_dirichlet_pdf()	745
49.63.1.115 fgsl_ran_discrete()	745
49.63.1.116 fgsl_ran_discrete_free()	745
49.63.1.117 fgsl_ran_discrete_pdf()	745
49.63.1.118 fgsl_ran_discrete_preproc()	745
49.63.1.119 fgsl_ran_discrete_t_status()	746
49.63.1.120 fgsl_ran_exponential()	746
49.63.1.121 fgsl_ran_exponential_pdf()	746
49.63.1.122 fgsl_ran_exppow()	746
49.63.1.123 fgsl_ran_exppow_pdf()	746
49.63.1.124 fgsl_ran_fdist()	746
49.63.1.125 fgsl_ran_fdist_pdf()	747
49.63.1.126 fgsl_ran_flat()	747
49.63.1.127 fgsl_ran_flat_pdf()	747
49.63.1.128 fgsl_ran_gamma()	747
49.63.1.129 fgsl_ran_gamma_mt()	747
49.63.1.130 fgsl_ran_gamma_pdf()	747
49.63.1.131 fgsl_ran_gaussian()	748
49.63.1.132 fgsl_ran_gaussian_pdf()	748
49.63.1.133 fgsl_ran_gaussian_ratio_method()	748
49.63.1.134 fgsl_ran_gaussian_tail()	748
49.63.1.135 fgsl_ran_gaussian_tail_pdf()	748
49.63.1.136 fgsl_ran_gaussian_ziggurat()	748
49.63.1.137 fgsl_ran_geometric()	749
49.63.1.138 fgsl_ran_geometric_pdf()	749
49.63.1.139 fgsl_ran_gumbel1()	749
49.63.1.140 fgsl_ran_gumbel1_pdf()	749
49.63.1.141 fgsl_ran_gumbel2()	749
49.63.1.142 fgsl_ran_gumbel2_pdf()	749
49.63.1.143 fgsl_ran_hypergeometric()	750
49.63.1.144 fgsl_ran_hypergeometric_pdf()	750
49.63.1.145 fgsl_ran_landau()	750

49.63.1.146 fgsl_ran_landau_pdf()	750
49.63.1.147 fgsl_ran_laplace()	750
49.63.1.148 fgsl_ran_laplace_pdf()	750
49.63.1.149 fgsl_ran_levy()	751
49.63.1.150 fgsl_ran_levy_skew()	751
49.63.1.151 fgsl_ran_logarithmic()	751
49.63.1.152 fgsl_ran_logarithmic_pdf()	751
49.63.1.153 fgsl_ran_logistic()	751
49.63.1.154 fgsl_ran_logistic_pdf()	751
49.63.1.155 fgsl_ran_lognormal()	752
49.63.1.156 fgsl_ran_lognormal_pdf()	752
49.63.1.157 fgsl_ran_multinomial()	752
49.63.1.158 fgsl_ran_multinomial_lnpdf()	752
49.63.1.159 fgsl_ran_multinomial_pdf()	752
49.63.1.160 fgsl_ran_multivariate_gaussian()	752
49.63.1.161 fgsl_ran_multivariate_gaussian_log_pdf()	753
49.63.1.162 fgsl_ran_multivariate_gaussian_mean()	753
49.63.1.163 fgsl_ran_multivariate_gaussian_pdf()	753
49.63.1.164 fgsl_ran_multivariate_gaussian_vcov()	753
49.63.1.165 fgsl_ran_negative_binomial()	753
49.63.1.166 fgsl_ran_negative_binomial_pdf()	754
49.63.1.167 fgsl_ran_pareto()	754
49.63.1.168 fgsl_ran_pareto_pdf()	754
49.63.1.169 fgsl_ran_pascal()	754
49.63.1.170 fgsl_ran_pascal_pdf()	754
49.63.1.171 fgsl_ran_poisson()	754
49.63.1.172 fgsl_ran_poisson_pdf()	755
49.63.1.173 fgsl_ran_rayleigh()	755
49.63.1.174 fgsl_ran_rayleigh_pdf()	755
49.63.1.175 fgsl_ran_rayleigh_tail()	755
49.63.1.176 fgsl_ran_rayleigh_tail_pdf()	755
49.63.1.177 fgsl_ran_sample()	755
49.63.1.178 fgsl_ran_shuffle()	756
49.63.1.179 fgsl_ran_shuffle_double()	756
49.63.1.180 fgsl_ran_shuffle_size_t()	756
49.63.1.181 fgsl_ran_tdist()	756
49.63.1.182 fgsl_ran_tdist_pdf()	756
49.63.1.183 fgsl_ran_ugaussian()	756
49.63.1.184 fgsl_ran_ugaussian_pdf()	757
49.63.1.185 fgsl_ran_ugaussian_ratio_method()	757
49.63.1.186 fgsl_ran_ugaussian_tail()	757
49.63.1.187 fgsl_ran_ugaussian_tail_pdf()	757

49.63.1.188 fgsl_ran_weibull()	757
49.63.1.189 fgsl_ran_weibull_pdf()	757
49.63.1.190 fgsl_ran_wishart()	758
49.63.1.191 fgsl_ran_wishart_log_pdf()	758
49.63.1.192 fgsl_ran_wishart_pdf()	758
49.63.1.193 fgsl_rng_alloc()	758
49.63.1.194 fgsl_rng_c_ptr()	758
49.63.1.195 fgsl_rng_clone()	759
49.63.1.196 fgsl_rng_env_setup()	759
49.63.1.197 fgsl_rng_fread()	759
49.63.1.198 fgsl_rng_free()	759
49.63.1.199 fgsl_rng_fwrite()	759
49.63.1.200 fgsl_rng_get()	759
49.63.1.201 fgsl_rng_max()	759
49.63.1.202 fgsl_rng_memcpy()	760
49.63.1.203 fgsl_rng_min()	760
49.63.1.204 fgsl_rng_name()	760
49.63.1.205 fgsl_rng_set()	760
49.63.1.206 fgsl_rng_status()	760
49.63.1.207 fgsl_rng_uniform()	760
49.63.1.208 fgsl_rng_uniform_int()	761
49.63.1.209 fgsl_rng_uniform_pos()	761
49.64 interface/rng.finc File Reference	761
49.64.1 Function/Subroutine Documentation	765
49.64.1.1 fgsl_aux_qrng_assign()	765
49.64.1.2 fgsl_aux_rng_assign()	765
49.64.1.3 gsl_cdf_beta_p()	765
49.64.1.4 gsl_cdf_beta_pinv()	766
49.64.1.5 gsl_cdf_beta_q()	766
49.64.1.6 gsl_cdf_beta_qinv()	766
49.64.1.7 gsl_cdf_binomial_p()	766
49.64.1.8 gsl_cdf_binomial_q()	766
49.64.1.9 gsl_cdf_cauchy_p()	766
49.64.1.10 gsl_cdf_cauchy_pinv()	767
49.64.1.11 gsl_cdf_cauchy_q()	767
49.64.1.12 gsl_cdf_cauchy_qinv()	767
49.64.1.13 gsl_cdf_chisq_p()	767
49.64.1.14 gsl_cdf_chisq_pinv()	767
49.64.1.15 gsl_cdf_chisq_q()	767
49.64.1.16 gsl_cdf_chisq_qinv()	768
49.64.1.17 gsl_cdf_exponential_p()	768
49.64.1.18 gsl_cdf_exponential_pinv()	768

49.64.1.19 gsl_cdf_exponential_q()	768
49.64.1.20 gsl_cdf_exponential_qinv()	768
49.64.1.21 gsl_cdf_exppow_p()	768
49.64.1.22 gsl_cdf_exppow_q()	769
49.64.1.23 gsl_cdf_fdist_p()	769
49.64.1.24 gsl_cdf_fdist_pinv()	769
49.64.1.25 gsl_cdf_fdist_q()	769
49.64.1.26 gsl_cdf_fdist_qinv()	769
49.64.1.27 gsl_cdf_flat_p()	769
49.64.1.28 gsl_cdf_flat_pinv()	770
49.64.1.29 gsl_cdf_flat_q()	770
49.64.1.30 gsl_cdf_flat_qinv()	770
49.64.1.31 gsl_cdf_gamma_p()	770
49.64.1.32 gsl_cdf_gamma_pinv()	770
49.64.1.33 gsl_cdf_gamma_q()	770
49.64.1.34 gsl_cdf_gamma_qinv()	771
49.64.1.35 gsl_cdf_gaussian_p()	771
49.64.1.36 gsl_cdf_gaussian_pinv()	771
49.64.1.37 gsl_cdf_gaussian_q()	771
49.64.1.38 gsl_cdf_gaussian_qinv()	771
49.64.1.39 gsl_cdf_geometric_p()	771
49.64.1.40 gsl_cdf_geometric_q()	772
49.64.1.41 gsl_cdf_gumbel1_p()	772
49.64.1.42 gsl_cdf_gumbel1_pinv()	772
49.64.1.43 gsl_cdf_gumbel1_q()	772
49.64.1.44 gsl_cdf_gumbel1_qinv()	772
49.64.1.45 gsl_cdf_gumbel2_p()	772
49.64.1.46 gsl_cdf_gumbel2_pinv()	773
49.64.1.47 gsl_cdf_gumbel2_q()	773
49.64.1.48 gsl_cdf_gumbel2_qinv()	773
49.64.1.49 gsl_cdf_hypergeometric_p()	773
49.64.1.50 gsl_cdf_hypergeometric_q()	773
49.64.1.51 gsl_cdf_laplace_p()	774
49.64.1.52 gsl_cdf_laplace_pinv()	774
49.64.1.53 gsl_cdf_laplace_q()	774
49.64.1.54 gsl_cdf_laplace_qinv()	774
49.64.1.55 gsl_cdf_logistic_p()	774
49.64.1.56 gsl_cdf_logistic_pinv()	774
49.64.1.57 gsl_cdf_logistic_q()	775
49.64.1.58 gsl_cdf_logistic_qinv()	775
49.64.1.59 gsl_cdf_lognormal_p()	775
49.64.1.60 gsl_cdf_lognormal_pinv()	775

49.64.1.61 gsl_cdf_lognormal_q()	775
49.64.1.62 gsl_cdf_lognormal_qinv()	775
49.64.1.63 gsl_cdf_negative_binomial_p()	776
49.64.1.64 gsl_cdf_negative_binomial_q()	776
49.64.1.65 gsl_cdf_pareto_p()	776
49.64.1.66 gsl_cdf_pareto_pinv()	776
49.64.1.67 gsl_cdf_pareto_q()	776
49.64.1.68 gsl_cdf_pareto_qinv()	776
49.64.1.69 gsl_cdf_pascal_p()	777
49.64.1.70 gsl_cdf_pascal_q()	777
49.64.1.71 gsl_cdf_poisson_p()	777
49.64.1.72 gsl_cdf_poisson_q()	777
49.64.1.73 gsl_cdf_rayleigh_p()	777
49.64.1.74 gsl_cdf_rayleigh_pinv()	777
49.64.1.75 gsl_cdf_rayleigh_q()	778
49.64.1.76 gsl_cdf_rayleigh_qinv()	778
49.64.1.77 gsl_cdf_tdist_p()	778
49.64.1.78 gsl_cdf_tdist_pinv()	778
49.64.1.79 gsl_cdf_tdist_q()	778
49.64.1.80 gsl_cdf_tdist_qinv()	778
49.64.1.81 gsl_cdf_ugaussian_p()	779
49.64.1.82 gsl_cdf_ugaussian_pinv()	779
49.64.1.83 gsl_cdf_ugaussian_q()	779
49.64.1.84 gsl_cdf_ugaussian_qinv()	779
49.64.1.85 gsl_cdf_weibull_p()	779
49.64.1.86 gsl_cdf_weibull_pinv()	779
49.64.1.87 gsl_cdf_weibull_q()	780
49.64.1.88 gsl_cdf_weibull_qinv()	780
49.64.1.89 gsl_qrng_alloc()	780
49.64.1.90 gsl_qrng_clone()	780
49.64.1.91 gsl_qrng_free()	780
49.64.1.92 gsl_qrng_get()	780
49.64.1.93 gsl_qrng_init()	781
49.64.1.94 gsl_qrng_memcpy()	781
49.64.1.95 gsl_qrng_name()	781
49.64.1.96 gsl_ran_bernoulli()	781
49.64.1.97 gsl_ran_bernoulli_pdf()	781
49.64.1.98 gsl_ran_beta()	781
49.64.1.99 gsl_ran_beta_pdf()	782
49.64.1.100 gsl_ran_binomial()	782
49.64.1.101 gsl_ran_binomial_pdf()	782
49.64.1.102 gsl_ran_bivariate_gaussian()	782

49.64.1.103 gsl_ran_bivariate_gaussian_pdf()	782
49.64.1.104 gsl_ran_cauchy()	783
49.64.1.105 gsl_ran_cauchy_pdf()	783
49.64.1.106 gsl_ran_chisq()	783
49.64.1.107 gsl_ran_chisq_pdf()	783
49.64.1.108 gsl_ran_choose()	783
49.64.1.109 gsl_ran_dir_2d()	783
49.64.1.110 gsl_ran_dir_2d_trig_method()	784
49.64.1.111 gsl_ran_dir_3d()	784
49.64.1.112 gsl_ran_dir_nd()	784
49.64.1.113 gsl_ran_dirichlet()	784
49.64.1.114 gsl_ran_dirichlet_lnpdf()	784
49.64.1.115 gsl_ran_dirichlet_pdf()	785
49.64.1.116 gsl_ran_discrete()	785
49.64.1.117 gsl_ran_discrete_free()	785
49.64.1.118 gsl_ran_discrete_pdf()	785
49.64.1.119 gsl_ran_discrete_preproc()	785
49.64.1.120 gsl_ran_exponential()	785
49.64.1.121 gsl_ran_exponential_pdf()	786
49.64.1.122 gsl_ran_exppow()	786
49.64.1.123 gsl_ran_exppow_pdf()	786
49.64.1.124 gsl_ran_fdist()	786
49.64.1.125 gsl_ran_fdist_pdf()	786
49.64.1.126 gsl_ran_flat()	786
49.64.1.127 gsl_ran_flat_pdf()	787
49.64.1.128 gsl_ran_gamma()	787
49.64.1.129 gsl_ran_gamma_mt()	787
49.64.1.130 gsl_ran_gamma_pdf()	787
49.64.1.131 gsl_ran_gaussian()	787
49.64.1.132 gsl_ran_gaussian_pdf()	787
49.64.1.133 gsl_ran_gaussian_ratio_method()	788
49.64.1.134 gsl_ran_gaussian_tail()	788
49.64.1.135 gsl_ran_gaussian_tail_pdf()	788
49.64.1.136 gsl_ran_gaussian_ziggurat()	788
49.64.1.137 gsl_ran_geometric()	788
49.64.1.138 gsl_ran_geometric_pdf()	788
49.64.1.139 gsl_ran_gumbel1()	789
49.64.1.140 gsl_ran_gumbel1_pdf()	789
49.64.1.141 gsl_ran_gumbel2()	789
49.64.1.142 gsl_ran_gumbel2_pdf()	789
49.64.1.143 gsl_ran_hypergeometric()	789
49.64.1.144 gsl_ran_hypergeometric_pdf()	790

49.64.1.145	gsl_ran_landau()	790
49.64.1.146	gsl_ran_landau_pdf()	790
49.64.1.147	gsl_ran_laplace()	790
49.64.1.148	gsl_ran_laplace_pdf()	790
49.64.1.149	gsl_ran_levy()	790
49.64.1.150	gsl_ran_levy_skew()	791
49.64.1.151	gsl_ran_logarithmic()	791
49.64.1.152	gsl_ran_logarithmic_pdf()	791
49.64.1.153	gsl_ran_logistic()	791
49.64.1.154	gsl_ran_logistic_pdf()	791
49.64.1.155	gsl_ran_lognormal()	791
49.64.1.156	gsl_ran_lognormal_pdf()	792
49.64.1.157	gsl_ran_multinomial()	792
49.64.1.158	gsl_ran_multinomial_lnpdf()	792
49.64.1.159	gsl_ran_multinomial_pdf()	792
49.64.1.160	gsl_ran_multivariate_gaussian()	792
49.64.1.161	gsl_ran_multivariate_gaussian_log_pdf()	793
49.64.1.162	gsl_ran_multivariate_gaussian_mean()	793
49.64.1.163	gsl_ran_multivariate_gaussian_pdf()	793
49.64.1.164	gsl_ran_multivariate_gaussian_vcov()	793
49.64.1.165	gsl_ran_negative_binomial()	793
49.64.1.166	gsl_ran_negative_binomial_pdf()	794
49.64.1.167	gsl_ran_pareto()	794
49.64.1.168	gsl_ran_pareto_pdf()	794
49.64.1.169	gsl_ran_pascal()	794
49.64.1.170	gsl_ran_pascal_pdf()	794
49.64.1.171	gsl_ran_poisson()	794
49.64.1.172	gsl_ran_poisson_pdf()	795
49.64.1.173	gsl_ran_rayleigh()	795
49.64.1.174	gsl_ran_rayleigh_pdf()	795
49.64.1.175	gsl_ran_rayleigh_tail()	795
49.64.1.176	gsl_ran_rayleigh_tail_pdf()	795
49.64.1.177	gsl_ran_sample()	795
49.64.1.178	gsl_ran_shuffle()	796
49.64.1.179	gsl_ran_tdist()	796
49.64.1.180	gsl_ran_tdist_pdf()	796
49.64.1.181	gsl_ran_ugaussian()	796
49.64.1.182	gsl_ran_ugaussian_pdf()	796
49.64.1.183	gsl_ran_ugaussian_ratio_method()	796
49.64.1.184	gsl_ran_ugaussian_tail()	797
49.64.1.185	gsl_ran_ugaussian_tail_pdf()	797
49.64.1.186	gsl_ran_weibull()	797

49.64.1.187 gsl_ran_weibull_pdf()	797
49.64.1.188 gsl_ran_wishart()	797
49.64.1.189 gsl_ran_wishart_log_pdf()	798
49.64.1.190 gsl_ran_wishart_pdf()	798
49.64.1.191 gsl_rng_alloc()	798
49.64.1.192 gsl_rng_clone()	798
49.64.1.193 gsl_rng_env_setup()	798
49.64.1.194 gsl_rng_fread()	798
49.64.1.195 gsl_rng_free()	799
49.64.1.196 gsl_rng_fwrite()	799
49.64.1.197 gsl_rng_get()	799
49.64.1.198 gsl_rng_max()	799
49.64.1.199 gsl_rng_memcpy()	799
49.64.1.200 gsl_rng_min()	799
49.64.1.201 gsl_rng_name()	799
49.64.1.202 gsl_rng_set()	800
49.64.1.203 gsl_rng_uniform()	800
49.64.1.204 gsl_rng_uniform_int()	800
49.64.1.205 gsl_rng_uniform_pos()	800
49.65 api/roots.finc File Reference	800
49.65.1 Function/Subroutine Documentation	801
49.65.1.1 fgsl_root_fdfsolver_alloc()	801
49.65.1.2 fgsl_root_fdfsolver_free()	801
49.65.1.3 fgsl_root_fdfsolver_iterate()	801
49.65.1.4 fgsl_root_fdfsolver_name()	801
49.65.1.5 fgsl_root_fdfsolver_root()	801
49.65.1.6 fgsl_root_fdfsolver_set()	801
49.65.1.7 fgsl_root_fdfsolver_status()	802
49.65.1.8 fgsl_root_fsolver_alloc()	802
49.65.1.9 fgsl_root_fsolver_free()	802
49.65.1.10 fgsl_root_fsolver_iterate()	802
49.65.1.11 fgsl_root_fsolver_name()	802
49.65.1.12 fgsl_root_fsolver_root()	802
49.65.1.13 fgsl_root_fsolver_set()	802
49.65.1.14 fgsl_root_fsolver_status()	803
49.65.1.15 fgsl_root_fsolver_x_lower()	803
49.65.1.16 fgsl_root_fsolver_x_upper()	803
49.65.1.17 fgsl_root_test_delta()	803
49.65.1.18 fgsl_root_test_interval()	803
49.65.1.19 fgsl_root_test_residual()	803
49.66 interface/roots.finc File Reference	804
49.66.1 Function/Subroutine Documentation	804

49.66.1.1 fgsl_aux_fdfsolver_alloc()	804
49.66.1.2 fgsl_aux_fsolver_alloc()	805
49.66.1.3 gsl_root_fdfsolver_alloc()	805
49.66.1.4 gsl_root_fdfsolver_free()	805
49.66.1.5 gsl_root_fdfsolver_iterate()	805
49.66.1.6 gsl_root_fdfsolver_name()	805
49.66.1.7 gsl_root_fdfsolver_root()	805
49.66.1.8 gsl_root_fdfsolver_set()	805
49.66.1.9 gsl_root_fsolver_alloc()	806
49.66.1.10 gsl_root_fsolver_free()	806
49.66.1.11 gsl_root_fsolver_iterate()	806
49.66.1.12 gsl_root_fsolver_name()	806
49.66.1.13 gsl_root_fsolver_root()	806
49.66.1.14 gsl_root_fsolver_set()	806
49.66.1.15 gsl_root_fsolver_x_lower()	807
49.66.1.16 gsl_root_fsolver_x_upper()	807
49.66.1.17 gsl_root_test_delta()	807
49.66.1.18 gsl_root_test_interval()	807
49.66.1.19 gsl_root_test_residual()	807
49.67 api/rstat.finc File Reference	808
49.67.1 Function/Subroutine Documentation	808
49.67.1.1 fgsl_rstat_add()	808
49.67.1.2 fgsl_rstat_alloc()	808
49.67.1.3 fgsl_rstat_free()	808
49.67.1.4 fgsl_rstat_kurtosis()	809
49.67.1.5 fgsl_rstat_max()	809
49.67.1.6 fgsl_rstat_mean()	809
49.67.1.7 fgsl_rstat_median()	809
49.67.1.8 fgsl_rstat_min()	809
49.67.1.9 fgsl_rstat_n()	809
49.67.1.10 fgsl_rstat_quantile_add()	809
49.67.1.11 fgsl_rstat_quantile_alloc()	810
49.67.1.12 fgsl_rstat_quantile_free()	810
49.67.1.13 fgsl_rstat_quantile_get()	810
49.67.1.14 fgsl_rstat_quantile_reset()	810
49.67.1.15 fgsl_rstat_reset()	810
49.67.1.16 fgsl_rstat_rms()	810
49.67.1.17 fgsl_rstat_sd()	810
49.67.1.18 fgsl_rstat_sd_mean()	811
49.67.1.19 fgsl_rstat_skew()	811
49.67.1.20 fgsl_rstat_variance()	811
49.68 interface/rstat.finc File Reference	811

49.68.1 Function/Subroutine Documentation	812
49.68.1.1 gsl_rstat_add()	812
49.68.1.2 gsl_rstat_alloc()	812
49.68.1.3 gsl_rstat_free()	812
49.68.1.4 gsl_rstat_kurtosis()	812
49.68.1.5 gsl_rstat_max()	812
49.68.1.6 gsl_rstat_mean()	813
49.68.1.7 gsl_rstat_median()	813
49.68.1.8 gsl_rstat_min()	813
49.68.1.9 gsl_rstat_n()	813
49.68.1.10 gsl_rstat_quantile_add()	813
49.68.1.11 gsl_rstat_quantile_alloc()	813
49.68.1.12 gsl_rstat_quantile_free()	813
49.68.1.13 gsl_rstat_quantile_get()	814
49.68.1.14 gsl_rstat_quantile_reset()	814
49.68.1.15 gsl_rstat_reset()	814
49.68.1.16 gsl_rstat_rms()	814
49.68.1.17 gsl_rstat_sd()	814
49.68.1.18 gsl_rstat_sd_mean()	814
49.68.1.19 gsl_rstat_skew()	814
49.68.1.20 gsl_rstat_variance()	815
49.69 api/siman.finc File Reference	815
49.69.1 Function/Subroutine Documentation	815
49.69.1.1 fgsl_siman_params_free()	815
49.69.1.2 fgsl_siman_params_init()	815
49.69.1.3 fgsl_siman_params_t_status()	815
49.69.1.4 fgsl_siman_solve()	816
49.70 interface/siman.finc File Reference	816
49.70.1 Function/Subroutine Documentation	816
49.70.1.1 gsl_siman_solve()	817
49.71 api/sort.finc File Reference	817
49.71.1 Function/Subroutine Documentation	817
49.71.1.1 fgsl_heapsort()	818
49.71.1.2 fgsl_heapsort_index()	818
49.71.1.3 fgsl_sort2_double()	818
49.71.1.4 fgsl_sort_double()	818
49.71.1.5 fgsl_sort_double_index()	818
49.71.1.6 fgsl_sort_double_largest()	819
49.71.1.7 fgsl_sort_double_largest_index()	819
49.71.1.8 fgsl_sort_double_smallest()	819
49.71.1.9 fgsl_sort_double_smallest_index()	819
49.71.1.10 fgsl_sort_long()	819

49.71.1.11 fgsl_sort_long_index()	820
49.71.1.12 fgsl_sort_long_largest()	820
49.71.1.13 fgsl_sort_long_largest_index()	820
49.71.1.14 fgsl_sort_long_smallest()	820
49.71.1.15 fgsl_sort_long_smallest_index()	820
49.71.1.16 fgsl_sort_vector()	821
49.71.1.17 fgsl_sort_vector2()	821
49.71.1.18 fgsl_sort_vector_index()	821
49.71.1.19 fgsl_sort_vector_largest()	821
49.71.1.20 fgsl_sort_vector_largest_index()	821
49.71.1.21 fgsl_sort_vector_smallest()	821
49.71.1.22 fgsl_sort_vector_smallest_index()	822
49.72 interface/sort.finc File Reference	822
49.72.1 Function/Subroutine Documentation	823
49.72.1.1 gsl_heapsort()	823
49.72.1.2 gsl_heapsort_index()	823
49.72.1.3 gsl_sort()	823
49.72.1.4 gsl_sort2()	823
49.72.1.5 gsl_sort_index()	824
49.72.1.6 gsl_sort_largest()	824
49.72.1.7 gsl_sort_largest_index()	824
49.72.1.8 gsl_sort_long()	824
49.72.1.9 gsl_sort_long_index()	824
49.72.1.10 gsl_sort_long_largest()	825
49.72.1.11 gsl_sort_long_largest_index()	825
49.72.1.12 gsl_sort_long_smallest()	825
49.72.1.13 gsl_sort_long_smallest_index()	825
49.72.1.14 gsl_sort_smallest()	825
49.72.1.15 gsl_sort_smallest_index()	826
49.72.1.16 gsl_sort_vector()	826
49.72.1.17 gsl_sort_vector2()	826
49.72.1.18 gsl_sort_vector_index()	826
49.72.1.19 gsl_sort_vector_largest()	826
49.72.1.20 gsl_sort_vector_largest_index()	826
49.72.1.21 gsl_sort_vector_smallest()	827
49.72.1.22 gsl_sort_vector_smallest_index()	827
49.73 api/specfunc.finc File Reference	827
49.73.1 Function/Subroutine Documentation	833
49.73.1.1 fgsl_sf_airy_ai()	833
49.73.1.2 fgsl_sf_airy_ai_deriv()	833
49.73.1.3 fgsl_sf_airy_ai_deriv_e()	833
49.73.1.4 fgsl_sf_airy_ai_deriv_scaled()	834

49.73.1.5 fgsl_sf_airy_ai_deriv_scaled_e()	834
49.73.1.6 fgsl_sf_airy_ai_e()	834
49.73.1.7 fgsl_sf_airy_ai_scaled()	834
49.73.1.8 fgsl_sf_airy_ai_scaled_e()	834
49.73.1.9 fgsl_sf_airy_bi()	834
49.73.1.10 fgsl_sf_airy_bi_deriv()	835
49.73.1.11 fgsl_sf_airy_bi_deriv_e()	835
49.73.1.12 fgsl_sf_airy_bi_deriv_scaled()	835
49.73.1.13 fgsl_sf_airy_bi_deriv_scaled_e()	835
49.73.1.14 fgsl_sf_airy_bi_e()	835
49.73.1.15 fgsl_sf_airy_bi_scaled()	835
49.73.1.16 fgsl_sf_airy_bi_scaled_e()	836
49.73.1.17 fgsl_sf_airy_zero_ai()	836
49.73.1.18 fgsl_sf_airy_zero_ai_deriv()	836
49.73.1.19 fgsl_sf_airy_zero_ai_deriv_e()	836
49.73.1.20 fgsl_sf_airy_zero_ai_e()	836
49.73.1.21 fgsl_sf_airy_zero_bi()	836
49.73.1.22 fgsl_sf_airy_zero_bi_deriv()	837
49.73.1.23 fgsl_sf_airy_zero_bi_deriv_e()	837
49.73.1.24 fgsl_sf_airy_zero_bi_e()	837
49.73.1.25 fgsl_sf_angle_restrict_pos_e()	837
49.73.1.26 fgsl_sf_angle_restrict_symm_e()	837
49.73.1.27 fgsl_sf_atanint_e()	837
49.73.1.28 fgsl_sf_bessel_ic0_e()	838
49.73.1.29 fgsl_sf_bessel_ic0_scaled_e()	838
49.73.1.30 fgsl_sf_bessel_ic1_e()	838
49.73.1.31 fgsl_sf_bessel_ic1_scaled_e()	838
49.73.1.32 fgsl_sf_bessel_icn_e()	838
49.73.1.33 fgsl_sf_bessel_icn_scaled_e()	838
49.73.1.34 fgsl_sf_bessel_inu_e()	839
49.73.1.35 fgsl_sf_bessel_inu_scaled_e()	839
49.73.1.36 fgsl_sf_bessel_is0_scaled_e()	839
49.73.1.37 fgsl_sf_bessel_is1_scaled_e()	839
49.73.1.38 fgsl_sf_bessel_is2_scaled_e()	839
49.73.1.39 fgsl_sf_bessel_isl_scaled_e()	839
49.73.1.40 fgsl_sf_bessel_jc0_e()	840
49.73.1.41 fgsl_sf_bessel_jc1_e()	840
49.73.1.42 fgsl_sf_bessel_jcn_e()	840
49.73.1.43 fgsl_sf_bessel_jnu_e()	840
49.73.1.44 fgsl_sf_bessel_js0_e()	840
49.73.1.45 fgsl_sf_bessel_js1_e()	840
49.73.1.46 fgsl_sf_bessel_js2_e()	841

49.73.1.47 fgsl_sf_bessel_jsl_e()	841
49.73.1.48 fgsl_sf_bessel_kc0_e()	841
49.73.1.49 fgsl_sf_bessel_kc0_scaled_e()	841
49.73.1.50 fgsl_sf_bessel_kc1_e()	841
49.73.1.51 fgsl_sf_bessel_kc1_scaled_e()	841
49.73.1.52 fgsl_sf_bessel_kcn_e()	842
49.73.1.53 fgsl_sf_bessel_kcn_scaled_e()	842
49.73.1.54 fgsl_sf_bessel_knu_e()	842
49.73.1.55 fgsl_sf_bessel_knu_scaled_e()	842
49.73.1.56 fgsl_sf_bessel_ks0_scaled_e()	842
49.73.1.57 fgsl_sf_bessel_ks1_scaled_e()	842
49.73.1.58 fgsl_sf_bessel_ks2_scaled_e()	843
49.73.1.59 fgsl_sf_bessel_ksl_scaled_e()	843
49.73.1.60 fgsl_sf_bessel_lnknu_e()	843
49.73.1.61 fgsl_sf_bessel_sequence_jnu_e()	843
49.73.1.62 fgsl_sf_bessel_yc0_e()	843
49.73.1.63 fgsl_sf_bessel_yc1_e()	843
49.73.1.64 fgsl_sf_bessel_ycn_e()	844
49.73.1.65 fgsl_sf_bessel_ynu_e()	844
49.73.1.66 fgsl_sf_bessel_ys0_e()	844
49.73.1.67 fgsl_sf_bessel_ys1_e()	844
49.73.1.68 fgsl_sf_bessel_ys2_e()	844
49.73.1.69 fgsl_sf_bessel_ysl_e()	844
49.73.1.70 fgsl_sf_bessel_zero_jc0_e()	845
49.73.1.71 fgsl_sf_bessel_zero_jc1_e()	845
49.73.1.72 fgsl_sf_bessel_zero_jnu_e()	845
49.73.1.73 fgsl_sf_beta_e()	845
49.73.1.74 fgsl_sf_beta_inc_e()	845
49.73.1.75 fgsl_sf_chi_e()	845
49.73.1.76 fgsl_sf_choose_e()	846
49.73.1.77 fgsl_sf_ci_e()	846
49.73.1.78 fgsl_sf_clausen_e()	846
49.73.1.79 fgsl_sf_complex_cos_e()	846
49.73.1.80 fgsl_sf_complex_dilog_e()	846
49.73.1.81 fgsl_sf_complex_log_e()	847
49.73.1.82 fgsl_sf_complex_logsin_e()	847
49.73.1.83 fgsl_sf_complex_sin_e()	847
49.73.1.84 fgsl_sf_conicalp_0_e()	847
49.73.1.85 fgsl_sf_conicalp_1_e()	847
49.73.1.86 fgsl_sf_conicalp_cyl_reg_e()	848
49.73.1.87 fgsl_sf_conicalp_half_e()	848
49.73.1.88 fgsl_sf_conicalp_mhalf_e()	848

49.73.1.89 fgsl_sf_conicalp_sph_reg_e()	848
49.73.1.90 fgsl_sf_cos_err_e()	848
49.73.1.91 fgsl_sf_coulomb_cl_array()	849
49.73.1.92 fgsl_sf_coulomb_cl_e()	849
49.73.1.93 fgsl_sf_coulomb_wave_f_array()	849
49.73.1.94 fgsl_sf_coulomb_wave_fg_array()	849
49.73.1.95 fgsl_sf_coulomb_wave_fg_e()	849
49.73.1.96 fgsl_sf_coulomb_wave_fgp_array()	850
49.73.1.97 fgsl_sf_coulomb_wave_sphf_array()	850
49.73.1.98 fgsl_sf_coupling_3j_e()	850
49.73.1.99 fgsl_sf_coupling_6j_e()	850
49.73.1.100 fgsl_sf_coupling_9j_e()	851
49.73.1.101 fgsl_sf_dawson_e()	851
49.73.1.102 fgsl_sf_debye_1_e()	851
49.73.1.103 fgsl_sf_debye_2_e()	851
49.73.1.104 fgsl_sf_debye_3_e()	851
49.73.1.105 fgsl_sf_debye_4_e()	852
49.73.1.106 fgsl_sf_debye_5_e()	852
49.73.1.107 fgsl_sf_debye_6_e()	852
49.73.1.108 fgsl_sf_dilog_e()	852
49.73.1.109 fgsl_sf_doublefact_e()	852
49.73.1.110 fgsl_sf_ellint_d()	852
49.73.1.111 fgsl_sf_ellint_d_e()	853
49.73.1.112 fgsl_sf_ellint_e()	853
49.73.1.113 fgsl_sf_ellint_e_e()	853
49.73.1.114 fgsl_sf_ellint_ecomp()	853
49.73.1.115 fgsl_sf_ellint_ecomp_e()	853
49.73.1.116 fgsl_sf_ellint_f()	854
49.73.1.117 fgsl_sf_ellint_f_e()	854
49.73.1.118 fgsl_sf_ellint_kcomp()	854
49.73.1.119 fgsl_sf_ellint_kcomp_e()	854
49.73.1.120 fgsl_sf_ellint_p()	854
49.73.1.121 fgsl_sf_ellint_p_e()	855
49.73.1.122 fgsl_sf_ellint_pcomp()	855
49.73.1.123 fgsl_sf_ellint_pcomp_e()	855
49.73.1.124 fgsl_sf_ellint_rc()	855
49.73.1.125 fgsl_sf_ellint_rc_e()	855
49.73.1.126 fgsl_sf_ellint_rd()	856
49.73.1.127 fgsl_sf_ellint_rd_e()	856
49.73.1.128 fgsl_sf_ellint_rf()	856
49.73.1.129 fgsl_sf_ellint_rf_e()	856
49.73.1.130 fgsl_sf_ellint_rj()	856

49.73.1.131 fgsl_sf_ellint_rj_e()	857
49.73.1.132 fgsl_sf_erf_e()	857
49.73.1.133 fgsl_sf_erf_q_e()	857
49.73.1.134 fgsl_sf_erf_z_e()	857
49.73.1.135 fgsl_sf_erfc_e()	857
49.73.1.136 fgsl_sf_eta_e()	857
49.73.1.137 fgsl_sf_eta_int_e()	858
49.73.1.138 fgsl_sf_exp_e()	858
49.73.1.139 fgsl_sf_exp_e10_e()	858
49.73.1.140 fgsl_sf_exp_err_e()	858
49.73.1.141 fgsl_sf_exp_err_e10_e()	858
49.73.1.142 fgsl_sf_exp_mult_e()	858
49.73.1.143 fgsl_sf_exp_mult_e10_e()	859
49.73.1.144 fgsl_sf_exp_mult_err_e()	859
49.73.1.145 fgsl_sf_exp_mult_err_e10_e()	859
49.73.1.146 fgsl_sf_expint_3_e()	859
49.73.1.147 fgsl_sf_expint_e1_e()	859
49.73.1.148 fgsl_sf_expint_e2_e()	860
49.73.1.149 fgsl_sf_expint_ei_e()	860
49.73.1.150 fgsl_sf_expint_en_e()	860
49.73.1.151 fgsl_sf_expm1_e()	860
49.73.1.152 fgsl_sf_exprel_2_e()	860
49.73.1.153 fgsl_sf_exprel_e()	860
49.73.1.154 fgsl_sf_exprel_n_e()	861
49.73.1.155 fgsl_sf_fact_e()	861
49.73.1.156 fgsl_sf_fermi_dirac_0_e()	861
49.73.1.157 fgsl_sf_fermi_dirac_1_e()	861
49.73.1.158 fgsl_sf_fermi_dirac_2_e()	861
49.73.1.159 fgsl_sf_fermi_dirac_3half_e()	861
49.73.1.160 fgsl_sf_fermi_dirac_half_e()	862
49.73.1.161 fgsl_sf_fermi_dirac_inc_0_e()	862
49.73.1.162 fgsl_sf_fermi_dirac_int_e()	862
49.73.1.163 fgsl_sf_fermi_dirac_m1_e()	862
49.73.1.164 fgsl_sf_fermi_dirac_mhalf_e()	862
49.73.1.165 fgsl_sf_gamma_e()	862
49.73.1.166 fgsl_sf_gamma_inc_e()	863
49.73.1.167 fgsl_sf_gamma_inc_p_e()	863
49.73.1.168 fgsl_sf_gamma_inc_q_e()	863
49.73.1.169 fgsl_sf_gammainv_e()	863
49.73.1.170 fgsl_sf_gammastar_e()	863
49.73.1.171 fgsl_sf_gegenpoly_1_e()	863
49.73.1.172 fgsl_sf_gegenpoly_2_e()	864

49.73.1.173 fgsl_sf_gegenpoly_3_e()	864
49.73.1.174 fgsl_sf_gegenpoly_array()	864
49.73.1.175 fgsl_sf_gegenpoly_n_e()	864
49.73.1.176 fgsl_sf_hazard_e()	864
49.73.1.177 fgsl_sf_hermite_deriv_e()	865
49.73.1.178 fgsl_sf_hermite_e()	865
49.73.1.179 fgsl_sf_hermite_func_e()	865
49.73.1.180 fgsl_sf_hermite_func_fast_e()	865
49.73.1.181 fgsl_sf_hermite_func_series_e()	865
49.73.1.182 fgsl_sf_hermite_phys_e()	866
49.73.1.183 fgsl_sf_hermite_phys_series_e()	866
49.73.1.184 fgsl_sf_hermite_prob_deriv_e()	866
49.73.1.185 fgsl_sf_hermite_prob_e()	866
49.73.1.186 fgsl_sf_hermite_prob_series_e()	866
49.73.1.187 fgsl_sf_hermite_prob_zero_e()	867
49.73.1.188 fgsl_sf_hermite_series_e()	867
49.73.1.189 fgsl_sf_hermite_zero_e()	867
49.73.1.190 fgsl_sf_hydrogenicr_1_e()	867
49.73.1.191 fgsl_sf_hydrogenicr_e()	867
49.73.1.192 fgsl_sf_hyperg_0f1_e()	868
49.73.1.193 fgsl_sf_hyperg_1f1_e()	868
49.73.1.194 fgsl_sf_hyperg_1f1_int_e()	868
49.73.1.195 fgsl_sf_hyperg_2f0_e()	868
49.73.1.196 fgsl_sf_hyperg_2f1_conj_e()	868
49.73.1.197 fgsl_sf_hyperg_2f1_conj_renorm_e()	869
49.73.1.198 fgsl_sf_hyperg_2f1_e()	869
49.73.1.199 fgsl_sf_hyperg_2f1_renorm_e()	869
49.73.1.200 fgsl_sf_hyperg_u_e()	869
49.73.1.201 fgsl_sf_hyperg_u_e10_e()	869
49.73.1.202 fgsl_sf_hyperg_u_int_e()	870
49.73.1.203 fgsl_sf_hyperg_u_int_e10_e()	870
49.73.1.204 fgsl_sf_hypot_e()	870
49.73.1.205 fgsl_sf_hzeta_e()	870
49.73.1.206 fgsl_sf_laguerre_1_e()	870
49.73.1.207 fgsl_sf_laguerre_2_e()	871
49.73.1.208 fgsl_sf_laguerre_3_e()	871
49.73.1.209 fgsl_sf_laguerre_n_e()	871
49.73.1.210 fgsl_sf_lambert_w0_e()	871
49.73.1.211 fgsl_sf_lambert_wm1_e()	871
49.73.1.212 fgsl_sf_legendre_array()	871
49.73.1.213 fgsl_sf_legendre_array_e()	872
49.73.1.214 fgsl_sf_legendre_deriv2_alt_array()	872

49.73.1.215 fgsl_sf_legendre_deriv2_alt_array_e()	872
49.73.1.216 fgsl_sf_legendre_deriv2_array()	872
49.73.1.217 fgsl_sf_legendre_deriv2_array_e()	873
49.73.1.218 fgsl_sf_legendre_deriv_alt_array()	873
49.73.1.219 fgsl_sf_legendre_deriv_alt_array_e()	873
49.73.1.220 fgsl_sf_legendre_deriv_array()	873
49.73.1.221 fgsl_sf_legendre_deriv_array_e()	874
49.73.1.222 fgsl_sf_legendre_h3d_0_e()	874
49.73.1.223 fgsl_sf_legendre_h3d_1_e()	874
49.73.1.224 fgsl_sf_legendre_h3d_array()	874
49.73.1.225 fgsl_sf_legendre_h3d_e()	874
49.73.1.226 fgsl_sf_legendre_p1_e()	875
49.73.1.227 fgsl_sf_legendre_p2_e()	875
49.73.1.228 fgsl_sf_legendre_p3_e()	875
49.73.1.229 fgsl_sf_legendre_pl_array()	875
49.73.1.230 fgsl_sf_legendre_pl_deriv_array()	875
49.73.1.231 fgsl_sf_legendre_pl_e()	875
49.73.1.232 fgsl_sf_legendre_plm_e()	876
49.73.1.233 fgsl_sf_legendre_q0_e()	876
49.73.1.234 fgsl_sf_legendre_q1_e()	876
49.73.1.235 fgsl_sf_legendre_ql_e()	876
49.73.1.236 fgsl_sf_legendre_sphplm_e()	876
49.73.1.237 fgsl_sf_lnbeta_e()	876
49.73.1.238 fgsl_sf_lnchoose_e()	877
49.73.1.239 fgsl_sf_lncosh_e()	877
49.73.1.240 fgsl_sf_lndoublefact_e()	877
49.73.1.241 fgsl_sf_lnfact_e()	877
49.73.1.242 fgsl_sf_lngamma_complex_e()	877
49.73.1.243 fgsl_sf_lngamma_e()	877
49.73.1.244 fgsl_sf_lngamma_sgn_e()	878
49.73.1.245 fgsl_sf_lnpoch_e()	878
49.73.1.246 fgsl_sf_lnpoch_sgn_e()	878
49.73.1.247 fgsl_sf_lnsinh_e()	878
49.73.1.248 fgsl_sf_log_1plusx_e()	878
49.73.1.249 fgsl_sf_log_1plusx_mx_e()	878
49.73.1.250 fgsl_sf_log_abs_e()	879
49.73.1.251 fgsl_sf_log_e()	879
49.73.1.252 fgsl_sf_log_erfc_e()	879
49.73.1.253 fgsl_sf_mathieu_a_array()	879
49.73.1.254 fgsl_sf_mathieu_a_e()	879
49.73.1.255 fgsl_sf_mathieu_alloc()	879
49.73.1.256 fgsl_sf_mathieu_b_array()	880

49.73.1.257 fgsl_sf_mathieu_b_e()	880
49.73.1.258 fgsl_sf_mathieu_ce_array()	880
49.73.1.259 fgsl_sf_mathieu_ce_e()	880
49.73.1.260 fgsl_sf_mathieu_free()	880
49.73.1.261 fgsl_sf_mathieu_mc_array()	881
49.73.1.262 fgsl_sf_mathieu_mc_e()	881
49.73.1.263 fgsl_sf_mathieu_ms_array()	881
49.73.1.264 fgsl_sf_mathieu_ms_e()	881
49.73.1.265 fgsl_sf_mathieu_se_array()	882
49.73.1.266 fgsl_sf_mathieu_se_e()	882
49.73.1.267 fgsl_sf_multiply_e()	882
49.73.1.268 fgsl_sf_multiply_err_e()	882
49.73.1.269 fgsl_sf_poch_e()	882
49.73.1.270 fgsl_sf_pochrel_e()	883
49.73.1.271 fgsl_sf_polar_to_rect()	883
49.73.1.272 fgsl_sf_psi_1_e()	883
49.73.1.273 fgsl_sf_psi_1_int_e()	883
49.73.1.274 fgsl_sf_psi_1piy_e()	883
49.73.1.275 fgsl_sf_psi_e()	883
49.73.1.276 fgsl_sf_psi_int_e()	884
49.73.1.277 fgsl_sf_psi_n_e()	884
49.73.1.278 fgsl_sf_rect_to_polar()	884
49.73.1.279 fgsl_sf_shi_e()	884
49.73.1.280 fgsl_sf_si_e()	884
49.73.1.281 fgsl_sf_sin_err_e()	884
49.73.1.282 fgsl_sf_sinc_e()	885
49.73.1.283 fgsl_sf_synchrotron_1_e()	885
49.73.1.284 fgsl_sf_synchrotron_2_e()	885
49.73.1.285 fgsl_sf_taylorcoeff_e()	885
49.73.1.286 fgsl_sf_transport_2_e()	885
49.73.1.287 fgsl_sf_transport_3_e()	885
49.73.1.288 fgsl_sf_transport_4_e()	886
49.73.1.289 fgsl_sf_transport_5_e()	886
49.73.1.290 fgsl_sf_zeta_e()	886
49.73.1.291 fgsl_sf_zeta_int_e()	886
49.73.1.292 fgsl_sf_zetam1_e()	886
49.73.1.293 fgsl_sf_zetam1_int_e()	886
49.73.1.294 fgsl_sf_to_fgsl_sf()	887
49.73.1.295 fgsl_sf10_to_fgsl_sf10()	887
49.74 interface/specfunc.finc File Reference	887
49.74.1 Function/Subroutine Documentation	897
49.74.1.1 fgsl_sf_angle_restrict_pos()	897

49.74.1.2 fgsl_sf_angle_restrict_symm()	897
49.74.1.3 fgsl_sf_atanint()	897
49.74.1.4 fgsl_sf_bessel_ic0()	897
49.74.1.5 fgsl_sf_bessel_ic0_scaled()	898
49.74.1.6 fgsl_sf_bessel_ic1()	898
49.74.1.7 fgsl_sf_bessel_ic1_scaled()	898
49.74.1.8 fgsl_sf_bessel_icn()	898
49.74.1.9 fgsl_sf_bessel_icn_array()	898
49.74.1.10 fgsl_sf_bessel_icn_scaled()	898
49.74.1.11 fgsl_sf_bessel_icn_scaled_array()	899
49.74.1.12 fgsl_sf_bessel_inu()	899
49.74.1.13 fgsl_sf_bessel_inu_scaled()	899
49.74.1.14 fgsl_sf_bessel_is0_scaled()	899
49.74.1.15 fgsl_sf_bessel_is1_scaled()	899
49.74.1.16 fgsl_sf_bessel_is2_scaled()	899
49.74.1.17 fgsl_sf_bessel_isl_scaled()	900
49.74.1.18 fgsl_sf_bessel_isl_scaled_array()	900
49.74.1.19 fgsl_sf_bessel_jc0()	900
49.74.1.20 fgsl_sf_bessel_jc1()	900
49.74.1.21 fgsl_sf_bessel_jcn()	900
49.74.1.22 fgsl_sf_bessel_jcn_array()	900
49.74.1.23 fgsl_sf_bessel_jnu()	901
49.74.1.24 fgsl_sf_bessel_js0()	901
49.74.1.25 fgsl_sf_bessel_js1()	901
49.74.1.26 fgsl_sf_bessel_js2()	901
49.74.1.27 fgsl_sf_bessel_jsl()	901
49.74.1.28 fgsl_sf_bessel_jsl_array()	901
49.74.1.29 fgsl_sf_bessel_jsl_stepped_array()	902
49.74.1.30 fgsl_sf_bessel_kc0()	902
49.74.1.31 fgsl_sf_bessel_kc0_scaled()	902
49.74.1.32 fgsl_sf_bessel_kc1()	902
49.74.1.33 fgsl_sf_bessel_kc1_scaled()	902
49.74.1.34 fgsl_sf_bessel_kcn()	902
49.74.1.35 fgsl_sf_bessel_kcn_array()	903
49.74.1.36 fgsl_sf_bessel_kcn_scaled()	903
49.74.1.37 fgsl_sf_bessel_kcn_scaled_array()	903
49.74.1.38 fgsl_sf_bessel_knu()	903
49.74.1.39 fgsl_sf_bessel_knu_scaled()	903
49.74.1.40 fgsl_sf_bessel_ks0_scaled()	903
49.74.1.41 fgsl_sf_bessel_ks1_scaled()	904
49.74.1.42 fgsl_sf_bessel_ks2_scaled()	904
49.74.1.43 fgsl_sf_bessel_ksl_scaled()	904

49.74.1.44 fgsl_sf_bessel_ksl_scaled_array()	904
49.74.1.45 fgsl_sf_bessel_ksnu()	904
49.74.1.46 fgsl_sf_bessel_yc0()	904
49.74.1.47 fgsl_sf_bessel_yc1()	905
49.74.1.48 fgsl_sf_bessel_ycn()	905
49.74.1.49 fgsl_sf_bessel_ycn_array()	905
49.74.1.50 fgsl_sf_bessel_ynu()	905
49.74.1.51 fgsl_sf_bessel_ys0()	905
49.74.1.52 fgsl_sf_bessel_ys1()	905
49.74.1.53 fgsl_sf_bessel_ys2()	906
49.74.1.54 fgsl_sf_bessel_ysl()	906
49.74.1.55 fgsl_sf_bessel_ysl_array()	906
49.74.1.56 fgsl_sf_bessel_zero_jc0()	906
49.74.1.57 fgsl_sf_bessel_zero_jc1()	906
49.74.1.58 fgsl_sf_bessel_zero_jnu()	906
49.74.1.59 fgsl_sf_beta()	907
49.74.1.60 fgsl_sf_beta_inc()	907
49.74.1.61 fgsl_sf_chi()	907
49.74.1.62 fgsl_sf_choose()	907
49.74.1.63 fgsl_sf_ci()	907
49.74.1.64 fgsl_sf_clausen()	907
49.74.1.65 fgsl_sf_conicalp_0()	908
49.74.1.66 fgsl_sf_conicalp_1()	908
49.74.1.67 fgsl_sf_conicalp_cyl_reg()	908
49.74.1.68 fgsl_sf_conicalp_half()	908
49.74.1.69 fgsl_sf_conicalp_mhalf()	908
49.74.1.70 fgsl_sf_conicalp_sph_reg()	908
49.74.1.71 fgsl_sf_coupling_3j()	909
49.74.1.72 fgsl_sf_coupling_6j()	909
49.74.1.73 fgsl_sf_coupling_9j()	909
49.74.1.74 fgsl_sf_dawson()	909
49.74.1.75 fgsl_sf_debye_1()	909
49.74.1.76 fgsl_sf_debye_2()	910
49.74.1.77 fgsl_sf_debye_3()	910
49.74.1.78 fgsl_sf_debye_4()	910
49.74.1.79 fgsl_sf_debye_5()	910
49.74.1.80 fgsl_sf_debye_6()	910
49.74.1.81 fgsl_sf_dilog()	910
49.74.1.82 fgsl_sf_doublefact()	910
49.74.1.83 fgsl_sf_elljac_e()	911
49.74.1.84 fgsl_sf_erf()	911
49.74.1.85 fgsl_sf_erf_q()	911

49.74.1.86 fgsl_sf_erf_z()	911
49.74.1.87 fgsl_sf_erfc()	911
49.74.1.88 fgsl_sf_eta()	911
49.74.1.89 fgsl_sf_eta_int()	912
49.74.1.90 fgsl_sf_exp()	912
49.74.1.91 fgsl_sf_exp_mult()	912
49.74.1.92 fgsl_sf_expint_3()	912
49.74.1.93 fgsl_sf_expint_e1()	912
49.74.1.94 fgsl_sf_expint_e2()	912
49.74.1.95 fgsl_sf_expint_ei()	912
49.74.1.96 fgsl_sf_expint_en()	913
49.74.1.97 fgsl_sf_expm1()	913
49.74.1.98 fgsl_sf_exprel()	913
49.74.1.99 fgsl_sf_exprel_2()	913
49.74.1.100 fgsl_sf_exprel_n()	913
49.74.1.101 fgsl_sf_fact()	913
49.74.1.102 fgsl_sf_fermi_dirac_0()	913
49.74.1.103 fgsl_sf_fermi_dirac_1()	914
49.74.1.104 fgsl_sf_fermi_dirac_2()	914
49.74.1.105 fgsl_sf_fermi_dirac_3half()	914
49.74.1.106 fgsl_sf_fermi_dirac_half()	914
49.74.1.107 fgsl_sf_fermi_dirac_inc_0()	914
49.74.1.108 fgsl_sf_fermi_dirac_int()	914
49.74.1.109 fgsl_sf_fermi_dirac_m1()	914
49.74.1.110 fgsl_sf_fermi_dirac_mhalf()	915
49.74.1.111 fgsl_sf_gamma()	915
49.74.1.112 fgsl_sf_gamma_inc()	915
49.74.1.113 fgsl_sf_gamma_inc_p()	915
49.74.1.114 fgsl_sf_gamma_inc_q()	915
49.74.1.115 fgsl_sf_gammainv()	915
49.74.1.116 fgsl_sf_gammastar()	916
49.74.1.117 fgsl_sf_gegenpoly_1()	916
49.74.1.118 fgsl_sf_gegenpoly_2()	916
49.74.1.119 fgsl_sf_gegenpoly_3()	916
49.74.1.120 fgsl_sf_gegenpoly_n()	916
49.74.1.121 fgsl_sf_hazard()	916
49.74.1.122 fgsl_sf_hermite()	917
49.74.1.123 fgsl_sf_hermite_array()	917
49.74.1.124 fgsl_sf_hermite_array_deriv()	917
49.74.1.125 fgsl_sf_hermite_deriv()	917
49.74.1.126 fgsl_sf_hermite_deriv_array()	917
49.74.1.127 fgsl_sf_hermite_func()	918

49.74.1.128 fgsl_sf_hermite_func_array()	918
49.74.1.129 fgsl_sf_hermite_func_fast()	918
49.74.1.130 fgsl_sf_hermite_func_series()	918
49.74.1.131 fgsl_sf_hermite_phys()	918
49.74.1.132 fgsl_sf_hermite_phys_array()	918
49.74.1.133 fgsl_sf_hermite_phys_series()	919
49.74.1.134 fgsl_sf_hermite_prob()	919
49.74.1.135 fgsl_sf_hermite_prob_array()	919
49.74.1.136 fgsl_sf_hermite_prob_array_deriv()	919
49.74.1.137 fgsl_sf_hermite_prob_deriv()	919
49.74.1.138 fgsl_sf_hermite_prob_deriv_array()	920
49.74.1.139 fgsl_sf_hermite_prob_series()	920
49.74.1.140 fgsl_sf_hermite_prob_zero()	920
49.74.1.141 fgsl_sf_hermite_series()	920
49.74.1.142 fgsl_sf_hermite_zero()	920
49.74.1.143 fgsl_sf_hydrogenicr()	920
49.74.1.144 fgsl_sf_hydrogenicr_1()	921
49.74.1.145 fgsl_sf_hyperg_0f1()	921
49.74.1.146 fgsl_sf_hyperg_1f1()	921
49.74.1.147 fgsl_sf_hyperg_1f1_int()	921
49.74.1.148 fgsl_sf_hyperg_2f0()	921
49.74.1.149 fgsl_sf_hyperg_2f1()	921
49.74.1.150 fgsl_sf_hyperg_2f1_conj()	922
49.74.1.151 fgsl_sf_hyperg_2f1_conj_renorm()	922
49.74.1.152 fgsl_sf_hyperg_2f1_renorm()	922
49.74.1.153 fgsl_sf_hyperg_u()	922
49.74.1.154 fgsl_sf_hyperg_u_int()	922
49.74.1.155 fgsl_sf_hypot()	923
49.74.1.156 fgsl_sf_hzeta()	923
49.74.1.157 fgsl_sf_laguerre_1()	923
49.74.1.158 fgsl_sf_laguerre_2()	923
49.74.1.159 fgsl_sf_laguerre_3()	923
49.74.1.160 fgsl_sf_laguerre_n()	923
49.74.1.161 fgsl_sf_lambert_w0()	924
49.74.1.162 fgsl_sf_lambert_wm1()	924
49.74.1.163 fgsl_sf_legendre_array_index()	924
49.74.1.164 fgsl_sf_legendre_array_n()	924
49.74.1.165 fgsl_sf_legendre_h3d()	924
49.74.1.166 fgsl_sf_legendre_h3d_0()	924
49.74.1.167 fgsl_sf_legendre_h3d_1()	925
49.74.1.168 fgsl_sf_legendre_nlm()	925
49.74.1.169 fgsl_sf_legendre_p1()	925

49.74.1.170 fgsl_sf_legendre_p2()	925
49.74.1.171 fgsl_sf_legendre_p3()	925
49.74.1.172 fgsl_sf_legendre_pl()	925
49.74.1.173 fgsl_sf_legendre_plm()	926
49.74.1.174 fgsl_sf_legendre_q0()	926
49.74.1.175 fgsl_sf_legendre_q1()	926
49.74.1.176 fgsl_sf_legendre_ql()	926
49.74.1.177 fgsl_sf_legendre_sphplm()	926
49.74.1.178 fgsl_sf_lnbeta()	926
49.74.1.179 fgsl_sf_lnchoose()	927
49.74.1.180 fgsl_sf_lncosh()	927
49.74.1.181 fgsl_sf_lndoublefact()	927
49.74.1.182 fgsl_sf_lnfact()	927
49.74.1.183 fgsl_sf_lngamma()	927
49.74.1.184 fgsl_sf_lnpoch()	927
49.74.1.185 fgsl_sf_lnsinh()	927
49.74.1.186 fgsl_sf_log()	928
49.74.1.187 fgsl_sf_log_1plusx()	928
49.74.1.188 fgsl_sf_log_1plusx_mx()	928
49.74.1.189 fgsl_sf_log_abs()	928
49.74.1.190 fgsl_sf_log_erfc()	928
49.74.1.191 fgsl_sf_mathieu_a()	928
49.74.1.192 fgsl_sf_mathieu_a_coeff()	929
49.74.1.193 fgsl_sf_mathieu_b()	929
49.74.1.194 fgsl_sf_mathieu_b_coeff()	929
49.74.1.195 fgsl_sf_mathieu_ce()	929
49.74.1.196 fgsl_sf_mathieu_mc()	929
49.74.1.197 fgsl_sf_mathieu_ms()	930
49.74.1.198 fgsl_sf_mathieu_se()	930
49.74.1.199 fgsl_sf_poch()	930
49.74.1.200 fgsl_sf_pochrel()	930
49.74.1.201 fgsl_sf_psi()	930
49.74.1.202 fgsl_sf_psi_1()	930
49.74.1.203 fgsl_sf_psi_1_int()	931
49.74.1.204 fgsl_sf_psi_1piy()	931
49.74.1.205 fgsl_sf_psi_int()	931
49.74.1.206 fgsl_sf_psi_n()	931
49.74.1.207 fgsl_sf_shi()	931
49.74.1.208 fgsl_sf_si()	931
49.74.1.209 fgsl_sf_sinc()	931
49.74.1.210 fgsl_sf_synchrotron_1()	932
49.74.1.211 fgsl_sf_synchrotron_2()	932

49.74.1.212 fgsl_sf_taylorcoeff()	932
49.74.1.213 fgsl_sf_transport_2()	932
49.74.1.214 fgsl_sf_transport_3()	932
49.74.1.215 fgsl_sf_transport_4()	932
49.74.1.216 fgsl_sf_transport_5()	932
49.74.1.217 fgsl_sf_zeta()	933
49.74.1.218 fgsl_sf_zeta_int()	933
49.74.1.219 fgsl_sf_zetam1()	933
49.74.1.220 fgsl_sf_zetam1_int()	933
49.74.1.221 gsl_sf_airy_ai()	933
49.74.1.222 gsl_sf_airy_ai_deriv()	933
49.74.1.223 gsl_sf_airy_ai_deriv_e()	934
49.74.1.224 gsl_sf_airy_ai_deriv_scaled()	934
49.74.1.225 gsl_sf_airy_ai_deriv_scaled_e()	934
49.74.1.226 gsl_sf_airy_ai_e()	934
49.74.1.227 gsl_sf_airy_ai_scaled()	934
49.74.1.228 gsl_sf_airy_ai_scaled_e()	934
49.74.1.229 gsl_sf_airy_bi()	935
49.74.1.230 gsl_sf_airy_bi_deriv()	935
49.74.1.231 gsl_sf_airy_bi_deriv_e()	935
49.74.1.232 gsl_sf_airy_bi_deriv_scaled()	935
49.74.1.233 gsl_sf_airy_bi_deriv_scaled_e()	935
49.74.1.234 gsl_sf_airy_bi_e()	935
49.74.1.235 gsl_sf_airy_bi_scaled()	936
49.74.1.236 gsl_sf_airy_bi_scaled_e()	936
49.74.1.237 gsl_sf_airy_zero_ai()	936
49.74.1.238 gsl_sf_airy_zero_ai_deriv()	936
49.74.1.239 gsl_sf_airy_zero_ai_deriv_e()	936
49.74.1.240 gsl_sf_airy_zero_ai_e()	936
49.74.1.241 gsl_sf_airy_zero_bi()	937
49.74.1.242 gsl_sf_airy_zero_bi_deriv()	937
49.74.1.243 gsl_sf_airy_zero_bi_deriv_e()	937
49.74.1.244 gsl_sf_airy_zero_bi_e()	937
49.74.1.245 gsl_sf_angle_restrict_pos_e()	937
49.74.1.246 gsl_sf_angle_restrict_symm_e()	937
49.74.1.247 gsl_sf_atanint_e()	938
49.74.1.248 gsl_sf_bessel_ic0_e()	938
49.74.1.249 gsl_sf_bessel_ic0_scaled_e()	938
49.74.1.250 gsl_sf_bessel_ic1_e()	938
49.74.1.251 gsl_sf_bessel_ic1_scaled_e()	938
49.74.1.252 gsl_sf_bessel_icn_e()	938
49.74.1.253 gsl_sf_bessel_icn_scaled_e()	939

49.74.1.254	gsl_sf_bessel_inu_e()	939
49.74.1.255	gsl_sf_bessel_inu_scaled_e()	939
49.74.1.256	gsl_sf_bessel_is0_scaled_e()	939
49.74.1.257	gsl_sf_bessel_is1_scaled_e()	939
49.74.1.258	gsl_sf_bessel_is2_scaled_e()	939
49.74.1.259	gsl_sf_bessel_isl_scaled_e()	940
49.74.1.260	gsl_sf_bessel_jc0_e()	940
49.74.1.261	gsl_sf_bessel_jc1_e()	940
49.74.1.262	gsl_sf_bessel_jcn_e()	940
49.74.1.263	gsl_sf_bessel_jnu_e()	940
49.74.1.264	gsl_sf_bessel_js0_e()	940
49.74.1.265	gsl_sf_bessel_js1_e()	941
49.74.1.266	gsl_sf_bessel_js2_e()	941
49.74.1.267	gsl_sf_bessel_jsl_e()	941
49.74.1.268	gsl_sf_bessel_kc0_e()	941
49.74.1.269	gsl_sf_bessel_kc0_scaled_e()	941
49.74.1.270	gsl_sf_bessel_kc1_e()	941
49.74.1.271	gsl_sf_bessel_kc1_scaled_e()	942
49.74.1.272	gsl_sf_bessel_kcn_e()	942
49.74.1.273	gsl_sf_bessel_kcn_scaled_e()	942
49.74.1.274	gsl_sf_bessel_knu_e()	942
49.74.1.275	gsl_sf_bessel_knu_scaled_e()	942
49.74.1.276	gsl_sf_bessel_ks0_scaled_e()	942
49.74.1.277	gsl_sf_bessel_ks1_scaled_e()	943
49.74.1.278	gsl_sf_bessel_ks2_scaled_e()	943
49.74.1.279	gsl_sf_bessel_ksl_scaled_e()	943
49.74.1.280	gsl_sf_bessel_lnknu_e()	943
49.74.1.281	gsl_sf_bessel_sequence_jnu_e()	943
49.74.1.282	gsl_sf_bessel_yc0_e()	943
49.74.1.283	gsl_sf_bessel_yc1_e()	944
49.74.1.284	gsl_sf_bessel_ycn_e()	944
49.74.1.285	gsl_sf_bessel_ynu_e()	944
49.74.1.286	gsl_sf_bessel_ys0_e()	944
49.74.1.287	gsl_sf_bessel_ys1_e()	944
49.74.1.288	gsl_sf_bessel_ys2_e()	944
49.74.1.289	gsl_sf_bessel_ysl_e()	945
49.74.1.290	gsl_sf_bessel_zero_jc0_e()	945
49.74.1.291	gsl_sf_bessel_zero_jc1_e()	945
49.74.1.292	gsl_sf_bessel_zero_jnu_e()	945
49.74.1.293	gsl_sf_beta_e()	945
49.74.1.294	gsl_sf_beta_inc_e()	945
49.74.1.295	gsl_sf_chi_e()	946

49.74.1.296	gsl_sf_choose_e()	946
49.74.1.297	gsl_sf_ci_e()	946
49.74.1.298	gsl_sf_clausen_e()	946
49.74.1.299	gsl_sf_complex_cos_e()	946
49.74.1.300	gsl_sf_complex_dilog_e()	946
49.74.1.301	gsl_sf_complex_log_e()	947
49.74.1.302	gsl_sf_complex_logsin_e()	947
49.74.1.303	gsl_sf_complex_sin_e()	947
49.74.1.304	gsl_sf_conicalp_0_e()	947
49.74.1.305	gsl_sf_conicalp_1_e()	947
49.74.1.306	gsl_sf_conicalp_cyl_reg_e()	948
49.74.1.307	gsl_sf_conicalp_half_e()	948
49.74.1.308	gsl_sf_conicalp_mhalf_e()	948
49.74.1.309	gsl_sf_conicalp_sph_reg_e()	948
49.74.1.310	gsl_sf_cos_err_e()	948
49.74.1.311	gsl_sf_coulomb_cl_array()	949
49.74.1.312	gsl_sf_coulomb_cl_e()	949
49.74.1.313	gsl_sf_coulomb_wave_f_array()	949
49.74.1.314	gsl_sf_coulomb_wave_fg_array()	949
49.74.1.315	gsl_sf_coulomb_wave_fg_e()	950
49.74.1.316	gsl_sf_coulomb_wave_fgp_array()	950
49.74.1.317	gsl_sf_coulomb_wave_sphf_array()	950
49.74.1.318	gsl_sf_coupling_3j_e()	950
49.74.1.319	gsl_sf_coupling_6j_e()	951
49.74.1.320	gsl_sf_coupling_9j_e()	951
49.74.1.321	gsl_sf_dawson_e()	951
49.74.1.322	gsl_sf_debye_1_e()	951
49.74.1.323	gsl_sf_debye_2_e()	951
49.74.1.324	gsl_sf_debye_3_e()	952
49.74.1.325	gsl_sf_debye_4_e()	952
49.74.1.326	gsl_sf_debye_5_e()	952
49.74.1.327	gsl_sf_debye_6_e()	952
49.74.1.328	gsl_sf_dilog_e()	952
49.74.1.329	gsl_sf_doublefact_e()	952
49.74.1.330	gsl_sf_ellint_d()	953
49.74.1.331	gsl_sf_ellint_d_e()	953
49.74.1.332	gsl_sf_ellint_e()	953
49.74.1.333	gsl_sf_ellint_e_e()	953
49.74.1.334	gsl_sf_ellint_ecomp()	953
49.74.1.335	gsl_sf_ellint_ecomp_e()	954
49.74.1.336	gsl_sf_ellint_f()	954
49.74.1.337	gsl_sf_ellint_f_e()	954

49.74.1.338 <code>gsl_sf_ellint_kcomp()</code>	954
49.74.1.339 <code>gsl_sf_ellint_kcomp_e()</code>	954
49.74.1.340 <code>gsl_sf_ellint_p()</code>	955
49.74.1.341 <code>gsl_sf_ellint_p_e()</code>	955
49.74.1.342 <code>gsl_sf_ellint_pcomp()</code>	955
49.74.1.343 <code>gsl_sf_ellint_pcomp_e()</code>	955
49.74.1.344 <code>gsl_sf_ellint_rc()</code>	955
49.74.1.345 <code>gsl_sf_ellint_rc_e()</code>	956
49.74.1.346 <code>gsl_sf_ellint_rd()</code>	956
49.74.1.347 <code>gsl_sf_ellint_rd_e()</code>	956
49.74.1.348 <code>gsl_sf_ellint_rf()</code>	956
49.74.1.349 <code>gsl_sf_ellint_rf_e()</code>	956
49.74.1.350 <code>gsl_sf_ellint_rj()</code>	957
49.74.1.351 <code>gsl_sf_ellint_rj_e()</code>	957
49.74.1.352 <code>gsl_sf_erf_e()</code>	957
49.74.1.353 <code>gsl_sf_erf_q_e()</code>	957
49.74.1.354 <code>gsl_sf_erf_z_e()</code>	957
49.74.1.355 <code>gsl_sf_erfc_e()</code>	958
49.74.1.356 <code>gsl_sf_eta_e()</code>	958
49.74.1.357 <code>gsl_sf_eta_int_e()</code>	958
49.74.1.358 <code>gsl_sf_exp_e()</code>	958
49.74.1.359 <code>gsl_sf_exp_e10_e()</code>	958
49.74.1.360 <code>gsl_sf_exp_err_e()</code>	958
49.74.1.361 <code>gsl_sf_exp_err_e10_e()</code>	959
49.74.1.362 <code>gsl_sf_exp_mult_e()</code>	959
49.74.1.363 <code>gsl_sf_exp_mult_e10_e()</code>	959
49.74.1.364 <code>gsl_sf_exp_mult_err_e()</code>	959
49.74.1.365 <code>gsl_sf_exp_mult_err_e10_e()</code>	959
49.74.1.366 <code>gsl_sf_expint_3_e()</code>	960
49.74.1.367 <code>gsl_sf_expint_e1_e()</code>	960
49.74.1.368 <code>gsl_sf_expint_e2_e()</code>	960
49.74.1.369 <code>gsl_sf_expint_ei_e()</code>	960
49.74.1.370 <code>gsl_sf_expint_en_e()</code>	960
49.74.1.371 <code>gsl_sf_expm1_e()</code>	960
49.74.1.372 <code>gsl_sf_exprel_2_e()</code>	961
49.74.1.373 <code>gsl_sf_exprel_e()</code>	961
49.74.1.374 <code>gsl_sf_exprel_n_e()</code>	961
49.74.1.375 <code>gsl_sf_fact_e()</code>	961
49.74.1.376 <code>gsl_sf_fermi_dirac_0_e()</code>	961
49.74.1.377 <code>gsl_sf_fermi_dirac_1_e()</code>	961
49.74.1.378 <code>gsl_sf_fermi_dirac_2_e()</code>	962
49.74.1.379 <code>gsl_sf_fermi_dirac_3half_e()</code>	962

49.74.1.380	gsl_sf_fermi_dirac_half_e()	962
49.74.1.381	gsl_sf_fermi_dirac_inc_0_e()	962
49.74.1.382	gsl_sf_fermi_dirac_int_e()	962
49.74.1.383	gsl_sf_fermi_dirac_m1_e()	962
49.74.1.384	gsl_sf_fermi_dirac_mhalf_e()	963
49.74.1.385	gsl_sf_gamma_e()	963
49.74.1.386	gsl_sf_gamma_inc_e()	963
49.74.1.387	gsl_sf_gamma_inc_p_e()	963
49.74.1.388	gsl_sf_gamma_inc_q_e()	963
49.74.1.389	gsl_sf_gammainv_e()	963
49.74.1.390	gsl_sf_gammastar_e()	964
49.74.1.391	gsl_sf_gegenpoly_1_e()	964
49.74.1.392	gsl_sf_gegenpoly_2_e()	964
49.74.1.393	gsl_sf_gegenpoly_3_e()	964
49.74.1.394	gsl_sf_gegenpoly_array()	964
49.74.1.395	gsl_sf_gegenpoly_n_e()	965
49.74.1.396	gsl_sf_hazard_e()	965
49.74.1.397	gsl_sf_hermite_deriv_e()	965
49.74.1.398	gsl_sf_hermite_e()	965
49.74.1.399	gsl_sf_hermite_func_e()	965
49.74.1.400	gsl_sf_hermite_func_fast_e()	966
49.74.1.401	gsl_sf_hermite_func_series_e()	966
49.74.1.402	gsl_sf_hermite_phys_e()	966
49.74.1.403	gsl_sf_hermite_phys_series_e()	966
49.74.1.404	gsl_sf_hermite_prob_deriv_e()	966
49.74.1.405	gsl_sf_hermite_prob_e()	967
49.74.1.406	gsl_sf_hermite_prob_series_e()	967
49.74.1.407	gsl_sf_hermite_prob_zero_e()	967
49.74.1.408	gsl_sf_hermite_series_e()	967
49.74.1.409	gsl_sf_hermite_zero_e()	967
49.74.1.410	gsl_sf_hydrogenicr_1_e()	968
49.74.1.411	gsl_sf_hydrogenicr_e()	968
49.74.1.412	gsl_sf_hyperg_0f1_e()	968
49.74.1.413	gsl_sf_hyperg_1f1_e()	968
49.74.1.414	gsl_sf_hyperg_1f1_int_e()	968
49.74.1.415	gsl_sf_hyperg_2f0_e()	969
49.74.1.416	gsl_sf_hyperg_2f1_conj_e()	969
49.74.1.417	gsl_sf_hyperg_2f1_conj_renorm_e()	969
49.74.1.418	gsl_sf_hyperg_2f1_e()	969
49.74.1.419	gsl_sf_hyperg_2f1_renorm_e()	969
49.74.1.420	gsl_sf_hyperg_u_e()	970
49.74.1.421	gsl_sf_hyperg_u_e10_e()	970

49.74.1.422 gsl_sf_hyperg_u_int_e()	970
49.74.1.423 gsl_sf_hyperg_u_int_e10_e()	970
49.74.1.424 gsl_sf_hypot_e()	970
49.74.1.425 gsl_sf_hzeta_e()	971
49.74.1.426 gsl_sf_laguerre_1_e()	971
49.74.1.427 gsl_sf_laguerre_2_e()	971
49.74.1.428 gsl_sf_laguerre_3_e()	971
49.74.1.429 gsl_sf_laguerre_n_e()	971
49.74.1.430 gsl_sf_lambert_w0_e()	972
49.74.1.431 gsl_sf_lambert_wm1_e()	972
49.74.1.432 gsl_sf_legendre_array()	972
49.74.1.433 gsl_sf_legendre_array_e()	972
49.74.1.434 gsl_sf_legendre_deriv2_alt_array()	972
49.74.1.435 gsl_sf_legendre_deriv2_alt_array_e()	973
49.74.1.436 gsl_sf_legendre_deriv2_array()	973
49.74.1.437 gsl_sf_legendre_deriv2_array_e()	973
49.74.1.438 gsl_sf_legendre_deriv_alt_array()	973
49.74.1.439 gsl_sf_legendre_deriv_alt_array_e()	974
49.74.1.440 gsl_sf_legendre_deriv_array()	974
49.74.1.441 gsl_sf_legendre_deriv_array_e()	974
49.74.1.442 gsl_sf_legendre_h3d_0_e()	974
49.74.1.443 gsl_sf_legendre_h3d_1_e()	974
49.74.1.444 gsl_sf_legendre_h3d_array()	975
49.74.1.445 gsl_sf_legendre_h3d_e()	975
49.74.1.446 gsl_sf_legendre_p1_e()	975
49.74.1.447 gsl_sf_legendre_p2_e()	975
49.74.1.448 gsl_sf_legendre_p3_e()	975
49.74.1.449 gsl_sf_legendre_pl_array()	975
49.74.1.450 gsl_sf_legendre_pl_deriv_array()	976
49.74.1.451 gsl_sf_legendre_pl_e()	976
49.74.1.452 gsl_sf_legendre_plm_e()	976
49.74.1.453 gsl_sf_legendre_q0_e()	976
49.74.1.454 gsl_sf_legendre_q1_e()	976
49.74.1.455 gsl_sf_legendre_ql_e()	976
49.74.1.456 gsl_sf_legendre_sphplm_e()	977
49.74.1.457 gsl_sf_lnbeta_e()	977
49.74.1.458 gsl_sf_lnchoose_e()	977
49.74.1.459 gsl_sf_lncosh_e()	977
49.74.1.460 gsl_sf_lndoublefact_e()	977
49.74.1.461 gsl_sf_lnfact_e()	977
49.74.1.462 gsl_sf_lngamma_complex_e()	978
49.74.1.463 gsl_sf_lngamma_e()	978

49.74.1.464	gsl_sf_lngamma_sgn_e()	978
49.74.1.465	gsl_sf_lnpoch_e()	978
49.74.1.466	gsl_sf_lnpoch_sgn_e()	978
49.74.1.467	gsl_sf_lnsinh_e()	979
49.74.1.468	gsl_sf_log_1plusx_e()	979
49.74.1.469	gsl_sf_log_1plusx_mx_e()	979
49.74.1.470	gsl_sf_log_abs_e()	979
49.74.1.471	gsl_sf_log_e()	979
49.74.1.472	gsl_sf_log_erfc_e()	979
49.74.1.473	gsl_sf_mathieu_a_array()	980
49.74.1.474	gsl_sf_mathieu_a_e()	980
49.74.1.475	gsl_sf_mathieu_alloc()	980
49.74.1.476	gsl_sf_mathieu_b_array()	980
49.74.1.477	gsl_sf_mathieu_b_e()	980
49.74.1.478	gsl_sf_mathieu_ce_array()	981
49.74.1.479	gsl_sf_mathieu_ce_e()	981
49.74.1.480	gsl_sf_mathieu_free()	981
49.74.1.481	gsl_sf_mathieu_mc_array()	981
49.74.1.482	gsl_sf_mathieu_mc_e()	981
49.74.1.483	gsl_sf_mathieu_ms_array()	982
49.74.1.484	gsl_sf_mathieu_ms_e()	982
49.74.1.485	gsl_sf_mathieu_se_array()	982
49.74.1.486	gsl_sf_mathieu_se_e()	982
49.74.1.487	gsl_sf_multiply_e()	982
49.74.1.488	gsl_sf_multiply_err_e()	983
49.74.1.489	gsl_sf_poch_e()	983
49.74.1.490	gsl_sf_pochrel_e()	983
49.74.1.491	gsl_sf_polar_to_rect()	983
49.74.1.492	gsl_sf_psi_1_e()	983
49.74.1.493	gsl_sf_psi_1_int_e()	984
49.74.1.494	gsl_sf_psi_1piy_e()	984
49.74.1.495	gsl_sf_psi_e()	984
49.74.1.496	gsl_sf_psi_int_e()	984
49.74.1.497	gsl_sf_psi_n_e()	984
49.74.1.498	gsl_sf_rect_to_polar()	984
49.74.1.499	gsl_sf_shi_e()	985
49.74.1.500	gsl_sf_si_e()	985
49.74.1.501	gsl_sf_sin_err_e()	985
49.74.1.502	gsl_sf_sinc_e()	985
49.74.1.503	gsl_sf_synchrotron_1_e()	985
49.74.1.504	gsl_sf_synchrotron_2_e()	985
49.74.1.505	gsl_sf_taylorcoeff_e()	986

49.74.1.506	gsl_sf_transport_2_e()	986
49.74.1.507	gsl_sf_transport_3_e()	986
49.74.1.508	gsl_sf_transport_4_e()	986
49.74.1.509	gsl_sf_transport_5_e()	986
49.74.1.510	gsl_sf_zeta_e()	986
49.74.1.511	gsl_sf_zeta_int_e()	987
49.74.1.512	gsl_sf_zetam1_e()	987
49.74.1.513	gsl_sf_zetam1_int_e()	987
49.75	api/splinalg.finc File Reference	987
49.75.1	Function/Subroutine Documentation	987
49.75.1.1	fgsl_splinalg_itsolve_alloc()	987
49.75.1.2	fgsl_splinalg_itsolve_free()	988
49.75.1.3	fgsl_splinalg_itsolve_iterate()	988
49.75.1.4	fgsl_splinalg_itsolve_name()	988
49.75.1.5	fgsl_splinalg_itsolve_normr()	988
49.76	interface/splinalg.finc File Reference	988
49.76.1	Function/Subroutine Documentation	989
49.76.1.1	fgsl_aux_splinalg_itsolve_alloc()	989
49.76.1.2	gsl_splinalg_itsolve_alloc()	989
49.76.1.3	gsl_splinalg_itsolve_free()	989
49.76.1.4	gsl_splinalg_itsolve_iterate()	989
49.76.1.5	gsl_splinalg_itsolve_name()	990
49.76.1.6	gsl_splinalg_itsolve_normr()	990
49.77	api/spmatrix.finc File Reference	990
49.77.1	Function/Subroutine Documentation	991
49.77.1.1	fgsl_spblas_dgemm()	991
49.77.1.2	fgsl_spblas_dgemv()	991
49.77.1.3	fgsl_spmatrix_add()	991
49.77.1.4	fgsl_spmatrix_add_to_dense()	991
49.77.1.5	fgsl_spmatrix_alloc()	991
49.77.1.6	fgsl_spmatrix_alloc_nzmax()	992
49.77.1.7	fgsl_spmatrix_compcol()	992
49.77.1.8	fgsl_spmatrix_compress()	992
49.77.1.9	fgsl_spmatrix_csc()	992
49.77.1.10	fgsl_spmatrix_csr()	992
49.77.1.11	fgsl_spmatrix_cumsum()	992
49.77.1.12	fgsl_spmatrix_d2sp()	993
49.77.1.13	fgsl_spmatrix_dense_add()	993
49.77.1.14	fgsl_spmatrix_dense_sub()	993
49.77.1.15	fgsl_spmatrix_equal()	993
49.77.1.16	fgsl_spmatrix_fprintf()	993
49.77.1.17	fgsl_spmatrix_fread()	993

49.77.1.18 fgsl_spmatrix_free()	994
49.77.1.19 fgsl_spmatrix_fscanf()	994
49.77.1.20 fgsl_spmatrix_fwrite()	994
49.77.1.21 fgsl_spmatrix_get()	994
49.77.1.22 fgsl_spmatrix_getfields()	994
49.77.1.23 fgsl_spmatrix_memcpy()	994
49.77.1.24 fgsl_spmatrix_min_index()	995
49.77.1.25 fgsl_spmatrix_minmax()	995
49.77.1.26 fgsl_spmatrix_nnz()	995
49.77.1.27 fgsl_spmatrix_norm1()	995
49.77.1.28 fgsl_spmatrix_realloc()	995
49.77.1.29 fgsl_spmatrix_scale()	995
49.77.1.30 fgsl_spmatrix_scale_columns()	996
49.77.1.31 fgsl_spmatrix_scale_rows()	996
49.77.1.32 fgsl_spmatrix_set()	996
49.77.1.33 fgsl_spmatrix_set_zero()	996
49.77.1.34 fgsl_spmatrix_size()	996
49.77.1.35 fgsl_spmatrix_sp2d()	996
49.77.1.36 fgsl_spmatrix_transpose()	997
49.77.1.37 fgsl_spmatrix_transpose_memcpy()	997
49.78 interface/spmatrix.finc File Reference	997
49.78.1 Function/Subroutine Documentation	998
49.78.1.1 gsl_aux_spmatrix_getfields()	998
49.78.1.2 gsl_spblas_dgemm()	998
49.78.1.3 gsl_spblas_dgemv()	999
49.78.1.4 gsl_spmatrix_add()	999
49.78.1.5 gsl_spmatrix_alloc()	999
49.78.1.6 gsl_spmatrix_alloc_nzmax()	999
49.78.1.7 gsl_spmatrix_compcol()	999
49.78.1.8 gsl_spmatrix_compress()	1000
49.78.1.9 gsl_spmatrix_csc()	1000
49.78.1.10 gsl_spmatrix_csr()	1000
49.78.1.11 gsl_spmatrix_cumsum()	1000
49.78.1.12 gsl_spmatrix_d2sp()	1000
49.78.1.13 gsl_spmatrix_dense_add()	1000
49.78.1.14 gsl_spmatrix_dense_sub()	1001
49.78.1.15 gsl_spmatrix_equal()	1001
49.78.1.16 gsl_spmatrix_fprintf()	1001
49.78.1.17 gsl_spmatrix_fread()	1001
49.78.1.18 gsl_spmatrix_free()	1001
49.78.1.19 gsl_spmatrix_fscanf()	1001
49.78.1.20 gsl_spmatrix_fwrite()	1002

49.78.1.21 gsl_spmatrix_get()	1002
49.78.1.22 gsl_spmatrix_memcpy()	1002
49.78.1.23 gsl_spmatrix_min_index()	1002
49.78.1.24 gsl_spmatrix_minmax()	1002
49.78.1.25 gsl_spmatrix_nnz()	1002
49.78.1.26 gsl_spmatrix_norm1()	1003
49.78.1.27 gsl_spmatrix_realloc()	1003
49.78.1.28 gsl_spmatrix_scale()	1003
49.78.1.29 gsl_spmatrix_scale_columns()	1003
49.78.1.30 gsl_spmatrix_scale_rows()	1003
49.78.1.31 gsl_spmatrix_set()	1003
49.78.1.32 gsl_spmatrix_set_zero()	1004
49.78.1.33 gsl_spmatrix_size()	1004
49.78.1.34 gsl_spmatrix_sp2d()	1004
49.78.1.35 gsl_spmatrix_transpose()	1004
49.78.1.36 gsl_spmatrix_transpose_memcpy()	1004
49.79 api/statistics.finc File Reference	1005
49.79.1 Function/Subroutine Documentation	1005
49.79.1.1 fgsl_stats_absdev()	1006
49.79.1.2 fgsl_stats_absdev_m()	1006
49.79.1.3 fgsl_stats_correlation()	1006
49.79.1.4 fgsl_stats_covariance()	1006
49.79.1.5 fgsl_stats_covariance_m()	1006
49.79.1.6 fgsl_stats_kurtosis()	1007
49.79.1.7 fgsl_stats_kurtosis_m_sd()	1007
49.79.1.8 fgsl_stats_lag1_autocorrelation()	1007
49.79.1.9 fgsl_stats_lag1_autocorrelation_m()	1007
49.79.1.10 fgsl_stats_max()	1007
49.79.1.11 fgsl_stats_max_index()	1008
49.79.1.12 fgsl_stats_mean()	1008
49.79.1.13 fgsl_stats_median_from_sorted_data()	1008
49.79.1.14 fgsl_stats_min()	1008
49.79.1.15 fgsl_stats_min_index()	1008
49.79.1.16 fgsl_stats_minmax()	1009
49.79.1.17 fgsl_stats_minmax_index()	1009
49.79.1.18 fgsl_stats_quantile_from_sorted_data()	1009
49.79.1.19 fgsl_stats_sd()	1009
49.79.1.20 fgsl_stats_sd_m()	1009
49.79.1.21 fgsl_stats_sd_with_fixed_mean()	1010
49.79.1.22 fgsl_stats_skew()	1010
49.79.1.23 fgsl_stats_skew_m_sd()	1010
49.79.1.24 fgsl_stats_spearman()	1010

49.79.1.25 fgsl_stats_variance()	1010
49.79.1.26 fgsl_stats_variance_m()	1011
49.79.1.27 fgsl_stats_variance_with_fixed_mean()	1011
49.79.1.28 fgsl_stats_wabsdev()	1011
49.79.1.29 fgsl_stats_wabsdev_m()	1011
49.79.1.30 fgsl_stats_wkurtosis()	1011
49.79.1.31 fgsl_stats_wkurtosis_m_sd()	1012
49.79.1.32 fgsl_stats_wmean()	1012
49.79.1.33 fgsl_stats_wsd()	1012
49.79.1.34 fgsl_stats_wsd_m()	1012
49.79.1.35 fgsl_stats_wsd_with_fixed_mean()	1013
49.79.1.36 fgsl_stats_wskew()	1013
49.79.1.37 fgsl_stats_wskew_m_sd()	1013
49.79.1.38 fgsl_stats_wvariance()	1013
49.79.1.39 fgsl_stats_wvariance_m()	1014
49.79.1.40 fgsl_stats_wvariance_with_fixed_mean()	1014
49.80 interface/statistics.finc File Reference	1014
49.80.1 Function/Subroutine Documentation	1015
49.80.1.1 fgsl_stats_gastwirth_from_sorted_data()	1015
49.80.1.2 fgsl_stats_mad()	1016
49.80.1.3 fgsl_stats_mad0()	1016
49.80.1.4 fgsl_stats_median()	1016
49.80.1.5 fgsl_stats_qn0_from_sorted_data()	1016
49.80.1.6 fgsl_stats_qn_from_sorted_data()	1016
49.80.1.7 fgsl_stats_select()	1017
49.80.1.8 fgsl_stats_sn0_from_sorted_data()	1017
49.80.1.9 fgsl_stats_sn_from_sorted_data()	1017
49.80.1.10 fgsl_stats_trmean_from_sorted_data()	1017
49.80.1.11 gsl_stats_absdev()	1017
49.80.1.12 gsl_stats_absdev_m()	1018
49.80.1.13 gsl_stats_correlation()	1018
49.80.1.14 gsl_stats_covariance()	1018
49.80.1.15 gsl_stats_covariance_m()	1018
49.80.1.16 gsl_stats_kurtosis()	1018
49.80.1.17 gsl_stats_kurtosis_m_sd()	1019
49.80.1.18 gsl_stats_lag1_autocorrelation()	1019
49.80.1.19 gsl_stats_lag1_autocorrelation_m()	1019
49.80.1.20 gsl_stats_max()	1019
49.80.1.21 gsl_stats_max_index()	1019
49.80.1.22 gsl_stats_mean()	1020
49.80.1.23 gsl_stats_median_from_sorted_data()	1020
49.80.1.24 gsl_stats_min()	1020

49.80.1.25	gsl_stats_min_index()	1020
49.80.1.26	gsl_stats_minmax()	1020
49.80.1.27	gsl_stats_minmax_index()	1021
49.80.1.28	gsl_stats_quantile_from_sorted_data()	1021
49.80.1.29	gsl_stats_sd()	1021
49.80.1.30	gsl_stats_sd_m()	1021
49.80.1.31	gsl_stats_sd_with_fixed_mean()	1021
49.80.1.32	gsl_stats_skew()	1022
49.80.1.33	gsl_stats_skew_m_sd()	1022
49.80.1.34	gsl_stats_spearman()	1022
49.80.1.35	gsl_stats_variance()	1022
49.80.1.36	gsl_stats_variance_m()	1022
49.80.1.37	gsl_stats_variance_with_fixed_mean()	1023
49.80.1.38	gsl_stats_wabsdev()	1023
49.80.1.39	gsl_stats_wabsdev_m()	1023
49.80.1.40	gsl_stats_wkurtosis()	1023
49.80.1.41	gsl_stats_wkurtosis_m_sd()	1023
49.80.1.42	gsl_stats_wmean()	1024
49.80.1.43	gsl_stats_wsd()	1024
49.80.1.44	gsl_stats_wsd_m()	1024
49.80.1.45	gsl_stats_wsd_with_fixed_mean()	1024
49.80.1.46	gsl_stats_wskew()	1024
49.80.1.47	gsl_stats_wskew_m_sd()	1025
49.80.1.48	gsl_stats_wvariance()	1025
49.80.1.49	gsl_stats_wvariance_m()	1025
49.80.1.50	gsl_stats_wvariance_with_fixed_mean()	1025
49.81	api/sum_levin.finc File Reference	1025
49.81.1	Function/Subroutine Documentation	1026
49.81.1.1	fgsl_sum_levin_u_accel()	1026
49.81.1.2	fgsl_sum_levin_u_alloc()	1026
49.81.1.3	fgsl_sum_levin_u_free()	1026
49.81.1.4	fgsl_sum_levin_utrunc_accel()	1026
49.81.1.5	fgsl_sum_levin_utrunc_alloc()	1026
49.81.1.6	fgsl_sum_levin_utrunc_free()	1027
49.82	interface/sum_levin.finc File Reference	1027
49.82.1	Function/Subroutine Documentation	1027
49.82.1.1	gsl_sum_levin_u_accel()	1027
49.82.1.2	gsl_sum_levin_u_alloc()	1028
49.82.1.3	gsl_sum_levin_u_free()	1028
49.82.1.4	gsl_sum_levin_utrunc_accel()	1028
49.82.1.5	gsl_sum_levin_utrunc_alloc()	1028
49.82.1.6	gsl_sum_levin_utrunc_free()	1028

49.83 api/wavelet.finc File Reference	1029
49.83.1 Function/Subroutine Documentation	1029
49.83.1.1 fgsl_sizeof_wavelet()	1029
49.83.1.2 fgsl_sizeof_wavelet_workspace()	1029
49.83.1.3 fgsl_wavelet2d_nstransform()	1030
49.83.1.4 fgsl_wavelet2d_nstransform_forward()	1030
49.83.1.5 fgsl_wavelet2d_nstransform_inverse()	1030
49.83.1.6 fgsl_wavelet2d_nstransform_matrix()	1030
49.83.1.7 fgsl_wavelet2d_nstransform_matrix_forward()	1030
49.83.1.8 fgsl_wavelet2d_nstransform_matrix_inverse()	1031
49.83.1.9 fgsl_wavelet2d_transform()	1031
49.83.1.10 fgsl_wavelet2d_transform_forward()	1031
49.83.1.11 fgsl_wavelet2d_transform_inverse()	1031
49.83.1.12 fgsl_wavelet2d_transform_matrix()	1031
49.83.1.13 fgsl_wavelet2d_transform_matrix_forward()	1032
49.83.1.14 fgsl_wavelet2d_transform_matrix_inverse()	1032
49.83.1.15 fgsl_wavelet_alloc()	1032
49.83.1.16 fgsl_wavelet_free()	1032
49.83.1.17 fgsl_wavelet_name()	1032
49.83.1.18 fgsl_wavelet_status()	1032
49.83.1.19 fgsl_wavelet_transform()	1033
49.83.1.20 fgsl_wavelet_transform_forward()	1033
49.83.1.21 fgsl_wavelet_transform_inverse()	1033
49.83.1.22 fgsl_wavelet_workspace_alloc()	1033
49.83.1.23 fgsl_wavelet_workspace_free()	1033
49.83.1.24 fgsl_wavelet_workspace_status()	1034
49.84 interface/wavelet.finc File Reference	1034
49.84.1 Function/Subroutine Documentation	1035
49.84.1.1 fgsl_aux_wavelet_alloc()	1035
49.84.1.2 gsl_aux_sizeof_wavelet()	1035
49.84.1.3 gsl_aux_sizeof_wavelet_workspace()	1035
49.84.1.4 gsl_wavelet2d_nstransform()	1035
49.84.1.5 gsl_wavelet2d_nstransform_forward()	1035
49.84.1.6 gsl_wavelet2d_nstransform_inverse()	1036
49.84.1.7 gsl_wavelet2d_nstransform_matrix()	1036
49.84.1.8 gsl_wavelet2d_nstransform_matrix_forward()	1036
49.84.1.9 gsl_wavelet2d_nstransform_matrix_inverse()	1036
49.84.1.10 gsl_wavelet2d_transform()	1036
49.84.1.11 gsl_wavelet2d_transform_forward()	1037
49.84.1.12 gsl_wavelet2d_transform_inverse()	1037
49.84.1.13 gsl_wavelet2d_transform_matrix()	1037
49.84.1.14 gsl_wavelet2d_transform_matrix_forward()	1037

49.84.1.15 gsl_wavelet2d_transform_matrix_inverse()	1037
49.84.1.16 gsl_wavelet_alloc()	1038
49.84.1.17 gsl_wavelet_free()	1038
49.84.1.18 gsl_wavelet_name()	1038
49.84.1.19 gsl_wavelet_transform()	1038
49.84.1.20 gsl_wavelet_transform_forward()	1038
49.84.1.21 gsl_wavelet_transform_inverse()	1039
49.84.1.22 gsl_wavelet_workspace_alloc()	1039
49.84.1.23 gsl_wavelet_workspace_free()	1039
49.85 fgsl.F90 File Reference	1039
49.86 interface/generics.finc File Reference	1054

Index	1057
--------------	-------------

Chapter 1

Main Page

Interface module for use of GSL from Fortran

Author

R. Bader, T. Schoonjans

Please see the [Related Pages](#) section for the information about the conventions used in the interface. Examples on how to use the interface are available in the

doc/examples

subdirectory of the source package.

Chapter 2

Introduction

1. Introductory notes:

- In Fortran code, `GSL_*` must be replaced by `FGSL_*` for each API call, abstract data type, module variables and parameters (with exception of the `M_*` mathematical constants)
- Some names were changed due to UC/LC aliasing. See the documentation chapter on special functions for details.
- Intrinsic type matching:
 - (a) `real(fgsl_double)` is used for double precision values
 - (b) `real(fgsl_float)` is used for single precision values
 - (c) `integer(fgsl_int)` for integer
 - (d) `integer(fgsl_long)` for long integer
 - (e) `integer(fgsl_size_t)` for `size_t` integer
 - (f) `complex(fgsl_double_complex)` for [gsl_complex](#)
 - (g) `character(fgsl_char)` for characters
 - (h) no value attributes and mostly no pointers in Fortran calls
 - (i) unsigned int must be converted to `integer(fgsl_long)`.
 - (j) `char *` results are converted to fixed length strings. Use `TRIM`.

2. Additional routines:

- Generic interface [fgsl_well_defined](#) for checking status of FGSL objects (which are typically opaque).
- See [api/array.finc](#) for array alignment routines.
- See [api/math.finc](#) for function object constructors.
- See [api/io.finc](#) for I/O related add-ons.

3. Structure of the documentation:

- type definitions are in the `fgsl` section of the Modules menu item
- all API routines are available via the Files menu item
- additional remarks on the various files are available via the Related Pages menu item

4. Only interfaces from the GSL manual are implemented. The C include files may contain more stuff which may only be meant for internal use, or is not officially documented.

5. Inlining of GSL routines is not possible.

6. Macros are not supported:

- macro values are replicated as parameters
- Inf/Nan need to use `IEEE_VALUE` (if available)

Chapter 3

Comments on vectors and matrices

Please go to [api/array.finc](#) for the API documentation. Since array processing is one of the strengths of Fortran, FGSL focuses on leveraging Fortran-style array processing for those GSL routines which require arguments of type `fgsl_vector*` or `fgsl_matrix*`.

Chapter 4

Comments on basis splines

Please go to [api/bspline.finc](#) for the API documentation.

Chapter 5

Comments on chebyshev approximation

Please go to [api/chebyshev.finc](#) for the API documentation.

Chapter 6

Comments on complex numbers

Please go to [api/complex.finc](#) for the API documentation.

Since the Fortran standard provides extensive support for complex numbers, only those routines for which no Fortran intrinsic is available are mapped in FGSL. Instead of an argument of type `gsl_complex`, a standard Fortran `complex(fgsl_double)` is used for all mapped functions.

Chapter 7

Comments on numerical derivatives

Please go to [api/deriv.finc](#) for the API documentation.

Chapter 8

Comments on Hankel transforms

Please go to api/dht.finc for the API documentation.

Chapter 9

Comments on eigensystems

Please go to [api/eigen.finc](#) for the API documentation.

Chapter 10

Comments on error handling

Please go to [api/error.finc](#) for the API documentation.

The error handling subroutines are available from Fortran, with exception of the macros `GSL_ERROR` and `GSL_ERROR_VAL`. A user-defined error handler can be defined either in C or using a Fortran function with the `bind(c)` attribute. Here is the description of the required interface:

```
subroutine errhand(reason, file, line, errno) bind(c)
  type(c_ptr), value :: reason, file
  integer(c_int), value :: line, errno
end subroutine errhand
```

An object of type `fgsl_error_handler_t` is returned by the constructor `fgsl_error_handler_↵init(errhand)`, which takes a subroutine with the interface described above as its argument. The subroutine `fgsl_error(reason, file, line, errno)` works in an analogous manner as the C version. If the Fortran preprocessor is supported, it should be possible to use the macros `__FILE__` and `__LINE__` in the above call. Once not needed any more, the error handler object can be deallocated by calling the subroutine `fgsl_↵_error_handler_free` with itself as its only argument. Note that the function `fgsl_strerror` returns a string of length `fgsl_strerrormax`.

Chapter 11

Comments on fast Fourier transforms

Please go to api/fft.finc for the API documentation.

Chapter 12

Comments on digital filtering

Please go to [api/filter.finc](#) for the API documentation.

Chapter 13

Comments on fitting of functions

Please go to [api/fit.finc](#) for the API documentation.

Chapter 14

Comments on histograms

Please go to [api/histogram.finc](#) for the API documentation.

Chapter 15

Comments on IEEE support

Please go to [api/ieee.finc](#) for the API documentation. interaction between the Fortran run time settings and C may lead to unreliable behaviour; for example, setting of IEEE rounding apparently does not always work correctly. Within Fortran, usage of the facilities defined in the intrinsic IEEE modules is the reliable and therefore appropriate method.

Chapter 16

Comments on numerical integration routines

Please go to [api/integration.finc](#) for the API documentation.

Chapter 17

Comments on interpolation routines

Please go to [api/interp.finc](#) for the API documentation.

Chapter 18

Comments on auxiliary I/O routines

Please go to api.io.finc for the API documentation.

Chapter 19

Comments on linear algebra routines

Please go to [api/linalg.finc](#) for the API documentation. Since GSL follows the C convention for ordering of elements, all matrices must be set up and read out transposed.

Chapter 20

Comments on elementary mathematical functions

Please go to [api/math.finc](#) for the API documentation. Note that many of the elementary functions are also available as Fortran intrinsics. The file also contains constructors for function objects.

Chapter 21

Comments on minimization routines

Please go to [api/min.finc](#) for the API documentation.

Chapter 22

Comments on miscellaneous support routines

Please go to [api/misc.finc](#) for the API documentation.

Chapter 23

Comments on monte carlo routines

Please go to [api/montecarlo.finc](#) for the API documentation. Note: in GSL 1.13, accessors were also added to GSL. They're slightly different named and have a differing interface from `fgsl_monte_*_etparams` routines already existing in FGSL. To preserve backward compatibility, the FGSL accessors are retained.

Chapter 24

Comments on moving window statistics

Please go to api/movstat.finc for the API documentation.

Chapter 25

Comments on nonlinear least squares fitting

Please go to [api/multifit.finc](#) for the API documentation. Legacy interface - [api/nlfit.finc](#) should be used instead.

The new interface deals with both "normal" and "large" problems. Please go to [api/nlfit.finc](#) for the API documentation.

Chapter 26

Comments on large linear least square systems

Please go to [api/multilarge.finc](#) for the API documentation.

Chapter 27

Comments on multidimensional minimization

Please go to [api/multimin.finc](#) for the API documentation.

Chapter 28

Comments on multidimensional root finding

Please go to [api/multiroots.finc](#) for the API documentation.

Chapter 29

Comments on ntuples

Please go to api/ntuple.finc for the API documentation.

Chapter 30

Comments on ordinary differential equations

Please go to [api/ode.finc](#) for the API documentation. Note that the new odeiv2 calls should be used for new code. The legacy odeiv calls are retained for binary compatibility.

Chapter 31

Comments on permutations, combinations and multisets

Please go to [api/permutation.finc](#) for the API documentation.

Chapter 32

Comments on polynomials

Please go to [api/poly.finc](#) for the API documentation.

Chapter 33

Comments on random numbers

Please go to [api/rng.finc](#) for the API documentation.

Chapter 34

Comments on root finding

Please go to [api/roots.finc](#) for the API documentation.

Chapter 35

Comments on running statistics

Please go to [api/rstat.finc](https://api.rstat.finc) for the API documentation.

Chapter 36

Comments on simulated annealing

Please go to [api/siman.finc](#) for the API documentation.

Chapter 37

Comments on sorting

Please go to [api/sort.finc](#) for the API documentation.

Chapter 38

Comments on special functions

Please go to [api/specfunc.finc](#) for the API documentation.

Functions for which two identical names would result due to LC/UC aliasing have been assigned new names. The name mappings are given in the following table. The additional letters **c** viz **s** are used to denote cylindrical and spherical Bessel functions, respectively.

C name	Fortran name
gsl_sf_bessel_J0	fgsl_sf_bessel_jc0
gsl_sf_bessel_J0_e	fgsl_sf_bessel_jc0_e
gsl_sf_bessel_J1	fgsl_sf_bessel_jc1
gsl_sf_bessel_J1_e	fgsl_sf_bessel_jc1_e
gsl_sf_bessel_Jn	fgsl_sf_bessel_jcn
gsl_sf_bessel_Jn_e	fgsl_sf_bessel_jcn_e
gsl_sf_bessel_Jn_array	fgsl_sf_bessel_jcn_array
gsl_sf_bessel_Y0	fgsl_sf_bessel_yc0
gsl_sf_bessel_Y0_e	fgsl_sf_bessel_yc0_e
gsl_sf_bessel_Y1	fgsl_sf_bessel_yc1
gsl_sf_bessel_Y1_e	fgsl_sf_bessel_yc1_e
gsl_sf_bessel_Yn	fgsl_sf_bessel_ycn
gsl_sf_bessel_Yn_e	fgsl_sf_bessel_ycn_e
gsl_sf_bessel_Yn_array	fgsl_sf_bessel_ycn_array
gsl_sf_bessel_I0	fgsl_sf_bessel_ic0
gsl_sf_bessel_I0_e	fgsl_sf_bessel_ic0_e
gsl_sf_bessel_I1	fgsl_sf_bessel_ic1
gsl_sf_bessel_I1_e	fgsl_sf_bessel_ic1_e
gsl_sf_bessel_In	fgsl_sf_bessel_icn
gsl_sf_bessel_In_e	fgsl_sf_bessel_icn_e
gsl_sf_bessel_In_array	fgsl_sf_bessel_icn_array
gsl_sf_bessel_I0_scaled	fgsl_sf_bessel_ic0_scaled
gsl_sf_bessel_I0_scaled_e	fgsl_sf_bessel_ic0_scaled_e
gsl_sf_bessel_I1_scaled	fgsl_sf_bessel_ic1_scaled
gsl_sf_bessel_I1_scaled_e	fgsl_sf_bessel_ic1_scaled_e
gsl_sf_bessel_In_scaled	fgsl_sf_bessel_icn_scaled
gsl_sf_bessel_In_scaled_e	fgsl_sf_bessel_icn_scaled_e
gsl_sf_bessel_In_scaled_array	fgsl_sf_bessel_icn_scaled_array

C name	Fortran name
gsl_sf_bessel_K0	fgsl_sf_bessel_kc0
gsl_sf_bessel_K0_e	fgsl_sf_bessel_kc0_e
gsl_sf_bessel_K1	fgsl_sf_bessel_kc1
gsl_sf_bessel_K1_e	fgsl_sf_bessel_kc1_e
gsl_sf_bessel_Kn	fgsl_sf_bessel_kcn
gsl_sf_bessel_Kn_e	fgsl_sf_bessel_kcn_e
gsl_sf_bessel_Kn_array	fgsl_sf_bessel_kcn_array
gsl_sf_bessel_K0_scaled	fgsl_sf_bessel_kc0_scaled
gsl_sf_bessel_K0_scaled_e	fgsl_sf_bessel_kc0_scaled_e
gsl_sf_bessel_K1_scaled	fgsl_sf_bessel_kc1_scaled
gsl_sf_bessel_K1_scaled_e	fgsl_sf_bessel_kc1_scaled_e
gsl_sf_bessel_Kn_scaled	fgsl_sf_bessel_kcn_scaled
gsl_sf_bessel_Kn_scaled_e	fgsl_sf_bessel_kcn_scaled_e
gsl_sf_bessel_Kn_scaled_array	fgsl_sf_bessel_kcn_scaled_array
gsl_sf_bessel_j0	fgsl_sf_bessel_js0
gsl_sf_bessel_j0_e	fgsl_sf_bessel_js0_e
gsl_sf_bessel_j1	fgsl_sf_bessel_js1
gsl_sf_bessel_j1_e	fgsl_sf_bessel_js1_e
gsl_sf_bessel_j2	fgsl_sf_bessel_js2
gsl_sf_bessel_j2_e	fgsl_sf_bessel_js2_e
gsl_sf_bessel_jl	fgsl_sf_bessel_jsl
gsl_sf_bessel_jl_e	fgsl_sf_bessel_jsl_e
gsl_sf_bessel_jl_array	fgsl_sf_bessel_jsl_array
gsl_sf_bessel_jl_stepped_array	fgsl_sf_bessel_jsl_stepped_array
gsl_sf_bessel_y0	fgsl_sf_bessel_ys0
gsl_sf_bessel_y0_e	fgsl_sf_bessel_ys0_e
gsl_sf_bessel_y1	fgsl_sf_bessel_ys1
gsl_sf_bessel_y1_e	fgsl_sf_bessel_ys1_e
gsl_sf_bessel_y2	fgsl_sf_bessel_ys2
gsl_sf_bessel_y2_e	fgsl_sf_bessel_ys2_e
gsl_sf_bessel_yl	fgsl_sf_bessel_ysl
gsl_sf_bessel_yl_e	fgsl_sf_bessel_ysl_e
gsl_sf_bessel_yl_array	fgsl_sf_bessel_ysl_array
gsl_sf_bessel_i0_scaled	fgsl_sf_bessel_is0_scaled
gsl_sf_bessel_i0_scaled_e	fgsl_sf_bessel_is0_scaled_e
gsl_sf_bessel_i1_scaled	fgsl_sf_bessel_is1_scaled
gsl_sf_bessel_i1_scaled_e	fgsl_sf_bessel_is1_scaled_e
gsl_sf_bessel_i2_scaled	fgsl_sf_bessel_is2_scaled
gsl_sf_bessel_i2_scaled_e	fgsl_sf_bessel_is2_scaled_e
gsl_sf_bessel_il_scaled	fgsl_sf_bessel_isl_scaled
gsl_sf_bessel_il_scaled_e	fgsl_sf_bessel_isl_scaled_e
gsl_sf_bessel_il_scaled_array	fgsl_sf_bessel_isl_scaled_array
gsl_sf_bessel_k0_scaled	fgsl_sf_bessel_ks0_scaled
gsl_sf_bessel_k0_scaled_e	fgsl_sf_bessel_ks0_scaled_e
gsl_sf_bessel_k1_scaled	fgsl_sf_bessel_ks1_scaled
gsl_sf_bessel_k1_scaled_e	fgsl_sf_bessel_ks1_scaled_e
gsl_sf_bessel_k2_scaled	fgsl_sf_bessel_ks2_scaled
gsl_sf_bessel_k2_scaled_e	fgsl_sf_bessel_ks2_scaled_e

C name	Fortran name
gsl_sf_bessel_kl_scaled	fgsl_sf_bessel_ksl_scaled
gsl_sf_bessel_kl_scaled_e	fgsl_sf_bessel_ksl_scaled_e
gsl_sf_bessel_kl_scaled_array	fgsl_sf_bessel_ksl_scaled_array
gsl_sf_bessel_zero_J0	fgsl_sf_bessel_zero_jc0
gsl_sf_bessel_zero_J0_e	fgsl_sf_bessel_zero_jc0_e
gsl_sf_bessel_zero_J1	fgsl_sf_bessel_zero_jc1
gsl_sf_bessel_zero_J1_e	fgsl_sf_bessel_zero_jc1_e
gsl_sf_bessel_zero_Jnu	fgsl_sf_bessel_zero_jcnu
gsl_sf_bessel_zero_Jnu_e	fgsl_sf_bessel_zero_jcnu_e

Chapter 39

on sparse matrix linear algebra

Please go to api/splinalg.finc for the API documentation.

Chapter 40

Comments on sparse matrix routines

Please go to [api/spmatrix.finc](#) for the API documentation.

Chapter 41

Comments on statistical functions

Please go to [api/statistics.finc](#) for the API documentation.

Chapter 42

Comments on series acceleration

Please go to [api/sum_levin.finc](#) for the API documentation.

Chapter 43

Comments on wavelet transforms

Please go to [api/wavelet.finc](#) for the API documentation.

Chapter 44

Modules Index

44.1 Modules List

Here is a list of all modules with brief descriptions:

fgsl	97
--------------------------------	--------------------

Chapter 45

Data Type Index

45.1 Data Types List

Here are the data types with brief descriptions:

assignment(=)	181
fgsl::fgsl_bspline_workspace	182
fgsl::fgsl_cheb_series	183
fgsl::fgsl_combination	183
fgsl::fgsl_dht	184
fgsl::fgsl_eigen_gen_workspace	184
fgsl::fgsl_eigen_genherm_workspace	184
fgsl::fgsl_eigen_genhermv_workspace	185
fgsl::fgsl_eigen_gensymm_workspace	185
fgsl::fgsl_eigen_gensymmv_workspace	186
fgsl::fgsl_eigen_genv_workspace	186
fgsl::fgsl_eigen_herm_workspace	187
fgsl::fgsl_eigen_hermv_workspace	187
fgsl::fgsl_eigen_nonsymm_workspace	187
fgsl::fgsl_eigen_nonsymmv_workspace	188
fgsl::fgsl_eigen_symm_workspace	188
fgsl::fgsl_eigen_symmv_workspace	189
fgsl::fgsl_error_handler_t	189
fgsl::fgsl_fft_complex_wavetable	190
fgsl::fgsl_fft_complex_workspace	190
fgsl::fgsl_fft_halfcomplex_wavetable	190
fgsl::fgsl_fft_real_wavetable	191
fgsl::fgsl_fft_real_workspace	191
fgsl::fgsl_file	192
fgsl::fgsl_filter_gaussian_workspace	192
fgsl::fgsl_filter_impulse_workspace	193
fgsl::fgsl_filter_median_workspace	193
fgsl::fgsl_filter_rmedian_workspace	193
fgsl::fgsl_function	194
fgsl::fgsl_function_fdf	194
fgsl::fgsl_histogram	195
fgsl::fgsl_histogram2d	195
fgsl::fgsl_histogram2d_pdf	196
fgsl::fgsl_histogram_pdf	196
fgsl_ieee_fprintf	196

fgsl_ieee_printf	197
fgsl::fgsl_integration_cquad_workspace	198
fgsl::fgsl_integration_fixed_workspace	198
fgsl::fgsl_integration_glfixed_table	198
fgsl::fgsl_integration_qawo_table	199
fgsl::fgsl_integration_qaws_table	199
fgsl::fgsl_integration_romberg_workspace	200
fgsl::fgsl_integration_workspace	200
fgsl::fgsl_interp	201
fgsl::fgsl_interp2d	201
fgsl::fgsl_interp2d_type	201
fgsl::fgsl_interp_accel	202
fgsl::fgsl_interp_type	202
fgsl::fgsl_matrix	203
fgsl_matrix_align	203
fgsl::fgsl_matrix_complex	204
fgsl_matrix_free	205
fgsl_matrix_init	205
fgsl_matrix_to_fptr	206
fgsl::fgsl_min_fminimizer	207
fgsl::fgsl_min_fminimizer_type	207
fgsl::fgsl_mode_t	208
fgsl::fgsl_monte_function	208
fgsl::fgsl_monte_miser_state	208
fgsl::fgsl_monte_plain_state	209
fgsl::fgsl_monte_vegas_state	209
fgsl::fgsl_movstat_function	
Fgsl_movstat_function interoperates with gsl_movstat_function	210
fgsl::fgsl_movstat_workspace	210
fgsl_multifit_eval_wdf	211
fgsl_multifit_eval_wf	211
fgsl::fgsl_multifit_fdfridge	212
fgsl::fgsl_multifit_fdsolver	212
fgsl_multifit_fdsolver_dif_df	213
fgsl::fgsl_multifit_fdsolver_type	213
fgsl::fgsl_multifit_fsolver	214
fgsl::fgsl_multifit_fsolver_type	214
fgsl::fgsl_multifit_function	215
fgsl::fgsl_multifit_function_fdf	215
fgsl::fgsl_multifit_linear_workspace	216
fgsl::fgsl_multifit_nlinear_fdf	216
fgsl::fgsl_multifit_nlinear_parameters	217
fgsl_multifit_nlinear_type	217
fgsl::fgsl_multifit_nlinear_type	218
fgsl::fgsl_multifit_nlinear_workspace	218
fgsl::fgsl_multifit_robust_stats	219
fgsl::fgsl_multifit_robust_type	221
fgsl::fgsl_multifit_robust_workspace	221
fgsl::fgsl_multilarge_linear_type	222
fgsl::fgsl_multilarge_linear_workspace	222
fgsl::fgsl_multilarge_nlinear_fdf	223
fgsl::fgsl_multilarge_nlinear_parameters	223
fgsl_multilarge_nlinear_type	224
fgsl::fgsl_multilarge_nlinear_type	224
fgsl::fgsl_multilarge_nlinear_workspace	225
fgsl::fgsl_multimin_fdfminimizer	225
fgsl::fgsl_multimin_fdfminimizer_type	225
fgsl::fgsl_multimin_fminimizer	226

fgsl::fgsl_multimin_fminimizer_type	226
fgsl::fgsl_multimin_function	227
fgsl::fgsl_multimin_function_fdf	227
fgsl::fgsl_multiroot_fdfsolver	228
fgsl::fgsl_multiroot_fdfsolver_type	228
fgsl::fgsl_multiroot_fsolver	228
fgsl::fgsl_multiroot_fsolver_type	229
fgsl::fgsl_multiroot_function	229
fgsl::fgsl_multiroot_function_fdf	230
fgsl::fgsl_multiset	230
fgsl::fgsl_nlinear_callback	231
fgsl::fgsl_ntuple	231
fgsl::fgsl_ntuple_select_fn	231
fgsl::fgsl_ntuple_value_fn	232
fgsl_obj_c_ptr	232
fgsl::fgsl_odeiv2_control	233
fgsl::fgsl_odeiv2_control_type	233
fgsl::fgsl_odeiv2_driver	234
fgsl::fgsl_odeiv2_evolve	234
fgsl::fgsl_odeiv2_step	234
fgsl::fgsl_odeiv2_step_type	235
fgsl::fgsl_odeiv2_system	235
fgsl::fgsl_odeiv_control	236
fgsl::fgsl_odeiv_control_type	236
fgsl::fgsl_odeiv_evolve	237
fgsl::fgsl_odeiv_step	237
fgsl::fgsl_odeiv_step_type	237
fgsl::fgsl_odeiv_system	238
fgsl::fgsl_permutation	238
fgsl_permute	239
fgsl_permute_inverse	239
fgsl::fgsl_poly_complex_workspace	240
fgsl::fgsl_qrng	240
fgsl::fgsl_qrng_type	241
fgsl::fgsl_ran_discrete_t	241
fgsl_ran_shuffle	242
fgsl::fgsl_rng	243
fgsl::fgsl_rng_type	243
fgsl::fgsl_root_fdfsolver	244
fgsl::fgsl_root_fdfsolver_type	244
fgsl::fgsl_root_fsolver	244
fgsl::fgsl_root_fsolver_type	245
fgsl::fgsl_rstat_quantile_workspace	245
fgsl::fgsl_rstat_workspace	246
fgsl::fgsl_sf_legendre_t	246
fgsl::fgsl_sf_mathieu_workspace	247
fgsl::fgsl_sf_result	247
fgsl::fgsl_sf_result_e10	248
fgsl::fgsl_siman_params_t	248
fgsl_sizeof	249
fgsl_sort	252
fgsl_sort_index	253
fgsl_sort_largest	253
fgsl_sort_largest_index	254
fgsl_sort_smallest	255
fgsl_sort_smallest_index	256
fgsl::fgsl_splinalg_itersolve	256
fgsl::fgsl_splinalg_itersolve_type	257

fgsl::fgsl_spline	257
fgsl::fgsl_spline2d	258
fgsl::fgsl_spmatrix	258
fgsl::fgsl_sum_levin_u_workspace	258
fgsl::fgsl_sum_levin_ustrunc_workspace	259
fgsl::fgsl_vector	259
fgsl_vector_align	260
fgsl::fgsl_vector_complex	261
fgsl_vector_free	261
fgsl_vector_init	262
fgsl::fgsl_vector_int	263
fgsl_vector_to_fptr	263
fgsl::fgsl_wavelet	264
fgsl::fgsl_wavelet_type	265
fgsl::fgsl_wavelet_workspace	265
fgsl_well_defined	266
fgsl::gsl_complex	274
fgsl::gsl_sf_result	274
fgsl::gsl_sf_result_e10	275

Chapter 46

File Index

46.1 File List

Here is a list of all files with brief descriptions:

fgsl.F90	1039
api/array.finc	277
api/bspline.finc	299
api/chebyshev.finc	304
api/complex.finc	310
api/deriv.finc	318
api/dht.finc	320
api/eigen.finc	324
api/error.finc	343
api/fft.finc	346
api/filter.finc	358
api/fit.finc	364
api/histogram.finc	368
api/ieee.finc	398
api/integration.finc	401
api/interp.finc	420
api/io.finc	455
api/linalg.finc	459
api/math.finc	532
api/min.finc	542
api/misc.finc	548
api/montecarlo.finc	551
api/movstat.finc	561
api/multifit.finc	570
api/multilarge.finc	611
api/multimin.finc	619
api/multiroots.finc	629
api/nlfit.finc	638
api/ntuple.finc	656
api/ode.finc	662
api/permutation.finc	688
api/poly.finc	714
api/rng.finc	721
api/roots.finc	800
api/rstat.finc	808

api/siman.finc	815
api/sort.finc	817
api/specfunc.finc	827
api/splinalg.finc	987
api/spmatrix.finc	990
api/statistics.finc	1005
api/sum_levin.finc	1025
api/wavelet.finc	1029
interface/array.finc	292
interface/bspline.finc	302
interface/chebyshev.finc	307
interface/complex.finc	314
interface/deriv.finc	319
interface/dht.finc	322
interface/eigen.finc	333
interface/error.finc	345
interface/fft.finc	352
interface/filter.finc	361
interface/fit.finc	366
interface/generics.finc	1054
interface/histogram.finc	383
interface/ieee.finc	400
interface/integration.finc	411
interface/interp.finc	437
interface/io.finc	457
interface/linalg.finc	495
interface/math.finc	538
interface/min.finc	545
interface/misc.finc	550
interface/montecarlo.finc	557
interface/movstat.finc	565
interface/multifit.finc	591
interface/multilarge.finc	615
interface/multimin.finc	624
interface/multiroots.finc	633
interface/nlfit.finc	647
interface/ntuple.finc	659
interface/ode.finc	676
interface/permutation.finc	701
interface/poly.finc	718
interface/rng.finc	761
interface/roots.finc	804
interface/rstat.finc	811
interface/siman.finc	816
interface/sort.finc	822
interface/specfunc.finc	887
interface/splinalg.finc	988
interface/spmatrix.finc	997
interface/statistics.finc	1014
interface/sum_levin.finc	1027
interface/wavelet.finc	1034

Chapter 47

Module Documentation

47.1 fgsl Module Reference

Data Types

- type [fgsl_bspline_workspace](#)
- type [fgsl_cheb_series](#)
- type [fgsl_combination](#)
- type [fgsl_dht](#)
- type [fgsl_eigen_gen_workspace](#)
- type [fgsl_eigen_genherm_workspace](#)
- type [fgsl_eigen_genhermv_workspace](#)
- type [fgsl_eigen_gensymm_workspace](#)
- type [fgsl_eigen_gensymmv_workspace](#)
- type [fgsl_eigen_genv_workspace](#)
- type [fgsl_eigen_herm_workspace](#)
- type [fgsl_eigen_hermv_workspace](#)
- type [fgsl_eigen_nonsymm_workspace](#)
- type [fgsl_eigen_nonsymmv_workspace](#)
- type [fgsl_eigen_symm_workspace](#)
- type [fgsl_eigen_symmv_workspace](#)
- type [fgsl_error_handler_t](#)
- type [fgsl_fft_complex_wavetable](#)
- type [fgsl_fft_complex_workspace](#)
- type [fgsl_fft_halfcomplex_wavetable](#)
- type [fgsl_fft_real_wavetable](#)
- type [fgsl_fft_real_workspace](#)
- type [fgsl_file](#)
- type [fgsl_filter_gaussian_workspace](#)
- type [fgsl_filter_impulse_workspace](#)
- type [fgsl_filter_median_workspace](#)
- type [fgsl_filter_rmedian_workspace](#)
- type [fgsl_function](#)
- type [fgsl_function_fdf](#)
- type [fgsl_histogram](#)
- type [fgsl_histogram2d](#)
- type [fgsl_histogram2d_pdf](#)
- type [fgsl_histogram_pdf](#)

- type `fgsl_integration_cquad_workspace`
- type `fgsl_integration_fixed_workspace`
- type `fgsl_integration_glfixed_table`
- type `fgsl_integration_qawo_table`
- type `fgsl_integration_qaws_table`
- type `fgsl_integration_romberg_workspace`
- type `fgsl_integration_workspace`
- type `fgsl_interp`
- type `fgsl_interp2d`
- type `fgsl_interp2d_type`
- type `fgsl_interp_accel`
- type `fgsl_interp_type`
- type `fgsl_matrix`
- type `fgsl_matrix_complex`
- type `fgsl_min_fminimizer`
- type `fgsl_min_fminimizer_type`
- type `fgsl_mode_t`
- type `fgsl_monte_function`
- type `fgsl_monte_miser_state`
- type `fgsl_monte_plain_state`
- type `fgsl_monte_vegas_state`
- type `fgsl_movstat_function`
- *`fgsl_movstat_function` interoperates with `gsl_movstat_function`*
- type `fgsl_movstat_workspace`
- type `fgsl_multifit_fdfridge`
- type `fgsl_multifit_fdfsolver`
- type `fgsl_multifit_fdfsolver_type`
- type `fgsl_multifit_fsolver`
- type `fgsl_multifit_fsolver_type`
- type `fgsl_multifit_function`
- type `fgsl_multifit_function_fdf`
- type `fgsl_multifit_linear_workspace`
- type `fgsl_multifit_nlinear_fdf`
- type `fgsl_multifit_nlinear_parameters`
- type `fgsl_multifit_nlinear_type`
- type `fgsl_multifit_nlinear_workspace`
- type `fgsl_multifit_robust_stats`
- type `fgsl_multifit_robust_type`
- type `fgsl_multifit_robust_workspace`
- type `fgsl_multilarge_linear_type`
- type `fgsl_multilarge_linear_workspace`
- type `fgsl_multilarge_nlinear_fdf`
- type `fgsl_multilarge_nlinear_parameters`
- type `fgsl_multilarge_nlinear_type`
- type `fgsl_multilarge_nlinear_workspace`
- type `fgsl_multimin_fdfminimizer`
- type `fgsl_multimin_fdfminimizer_type`
- type `fgsl_multimin_fminimizer`
- type `fgsl_multimin_fminimizer_type`
- type `fgsl_multimin_function`
- type `fgsl_multimin_function_fdf`
- type `fgsl_multiroot_fdfsolver`
- type `fgsl_multiroot_fdfsolver_type`
- type `fgsl_multiroot_fsolver`

- type [fgsl_multiroot_fsolver_type](#)
- type [fgsl_multiroot_function](#)
- type [fgsl_multiroot_function_fdf](#)
- type [fgsl_multiset](#)
- interface [fgsl_nlinear_callback](#)
- type [fgsl_ntuple](#)
- type [fgsl_ntuple_select_fn](#)
- type [fgsl_ntuple_value_fn](#)
- type [fgsl_odeiv2_control](#)
- type [fgsl_odeiv2_control_type](#)
- type [fgsl_odeiv2_driver](#)
- type [fgsl_odeiv2_evolve](#)
- type [fgsl_odeiv2_step](#)
- type [fgsl_odeiv2_step_type](#)
- type [fgsl_odeiv2_system](#)
- type [fgsl_odeiv_control](#)
- type [fgsl_odeiv_control_type](#)
- type [fgsl_odeiv_evolve](#)
- type [fgsl_odeiv_step](#)
- type [fgsl_odeiv_step_type](#)
- type [fgsl_odeiv_system](#)
- type [fgsl_permutation](#)
- type [fgsl_poly_complex_workspace](#)
- type [fgsl_qrng](#)
- type [fgsl_qrng_type](#)
- type [fgsl_ran_discrete_t](#)
- type [fgsl_rng](#)
- type [fgsl_rng_type](#)
- type [fgsl_root_fdfsolver](#)
- type [fgsl_root_fdfsolver_type](#)
- type [fgsl_root_fsolver](#)
- type [fgsl_root_fsolver_type](#)
- type [fgsl_rstat_quantile_workspace](#)
- type [fgsl_rstat_workspace](#)
- type [fgsl_sf_legendre_t](#)
- type [fgsl_sf_mathieu_workspace](#)
- type [fgsl_sf_result](#)
- type [fgsl_sf_result_e10](#)
- type [fgsl_siman_params_t](#)
- type [fgsl_splinalg_itersolve](#)
- type [fgsl_splinalg_itersolve_type](#)
- type [fgsl_spline](#)
- type [fgsl_spline2d](#)
- type [fgsl_spmatrix](#)
- type [fgsl_sum_levin_u_workspace](#)
- type [fgsl_sum_levin_ustrunc_workspace](#)
- type [fgsl_vector](#)
- type [fgsl_vector_complex](#)
- type [fgsl_vector_int](#)
- type [fgsl_wavelet](#)
- type [fgsl_wavelet_type](#)
- type [fgsl_wavelet_workspace](#)
- type [gsl_complex](#)
- type [gsl_sf_result](#)
- type [gsl_sf_result_e10](#)

Variables

- integer, parameter, public `fgsl_double` = `c_double`
- integer, parameter, public `fgsl_double_complex` = `c_double_complex`
- integer, parameter, public `fgsl_extended` = `selected_real_kind(13)`
- integer, parameter, public `fgsl_float` = `c_float`
- integer, parameter, public `fgsl_int` = `c_int`
- integer, parameter, public `fgsl_long` = `c_long`
- integer, parameter, public `fgsl_size_t` = `c_size_t`
- integer, parameter, public `fgsl_char` = `c_char`
- integer, parameter, public `fgsl_strmax` = 128
- integer, parameter, public `fgsl_pathmax` = 2048
- character(kind=`fgsl_char`, len= *), parameter, public `fgsl_version` = `PACKAGE_VERSION`
- character(kind=`fgsl_char`, len= *), parameter, public `fgsl_gslbase` = `GSL_VERSION`
- integer(`fgsl_int`), parameter, public `fgsl_success` = 0
- integer(`fgsl_int`), parameter, public `fgsl_failure` = -1
- integer(`fgsl_int`), parameter, public `fgsl_continue` = -2
- integer(`fgsl_int`), parameter, public `fgsl_edom` = 1
- integer(`fgsl_int`), parameter, public `fgsl_erange` = 2
- integer(`fgsl_int`), parameter, public `fgsl_efault` = 3
- integer(`fgsl_int`), parameter, public `fgsl_einval` = 4
- integer(`fgsl_int`), parameter, public `fgsl_efactor` = 6
- integer(`fgsl_int`), parameter, public `fgsl_esanity` = 7
- integer(`fgsl_int`), parameter, public `fgsl_enomem` = 8
- integer(`fgsl_int`), parameter, public `fgsl_ebadfunc` = 9
- integer(`fgsl_int`), parameter, public `fgsl_erunaway` = 10
- integer(`fgsl_int`), parameter, public `fgsl_emaxiter` = 11
- integer(`fgsl_int`), parameter, public `fgsl_ezerodiv` = 12
- integer(`fgsl_int`), parameter, public `fgsl_ebadtol` = 13
- integer(`fgsl_int`), parameter, public `fgsl_etol` = 14
- integer(`fgsl_int`), parameter, public `fgsl_eundrflw` = 15
- integer(`fgsl_int`), parameter, public `fgsl_eovrflw` = 16
- integer(`fgsl_int`), parameter, public `fgsl_eloss` = 17
- integer(`fgsl_int`), parameter, public `fgsl_eround` = 18
- integer(`fgsl_int`), parameter, public `fgsl_ebadlen` = 19
- integer(`fgsl_int`), parameter, public `fgsl_enotsqr` = 20
- integer(`fgsl_int`), parameter, public `fgsl_esing` = 21
- integer(`fgsl_int`), parameter, public `fgsl_ediverge` = 22
- integer(`fgsl_int`), parameter, public `fgsl_eunsup` = 23
- integer(`fgsl_int`), parameter, public `fgsl_eunimpl` = 24
- integer(`fgsl_int`), parameter, public `fgsl_ecache` = 25
- integer(`fgsl_int`), parameter, public `fgsl_etable` = 26
- integer(`fgsl_int`), parameter, public `fgsl_enoproq` = 27
- integer(`fgsl_int`), parameter, public `fgsl_enoproqj` = 28
- integer(`fgsl_int`), parameter, public `fgsl_etolf` = 29
- integer(`fgsl_int`), parameter, public `fgsl_etolx` = 30
- integer(`fgsl_int`), parameter, public `fgsl_etolg` = 31
- integer(`fgsl_int`), parameter, public `fgsl_eof` = 32
- real(`fgsl_extended`), parameter, public `m_e` = 2.71828182845904523536028747135_fgsl_extended
- real(`fgsl_extended`), parameter, public `m_log2e` = 1.44269504088896340735992468100_fgsl_extended
- real(`fgsl_extended`), parameter, public `m_log10e` = 0.43429448190325182765112891892_fgsl_extended
- real(`fgsl_extended`), parameter, public `m_sqrt2` = 1.41421356237309504880168872421_fgsl_extended
- real(`fgsl_extended`), parameter, public `m_sqrt1_2` = 0.70710678118654752440084436210_fgsl_extended
- real(`fgsl_extended`), parameter, public `m_sqrt3` = 1.73205080756887729352744634151_fgsl_extended
- real(`fgsl_extended`), parameter, public `m_pi` = 3.14159265358979323846264338328_fgsl_extended

- `real(fgsl_extended)`, parameter, public `m_pi_2` = 1.57079632679489661923132169164_fgsl_extended
- `real(fgsl_extended)`, parameter, public `m_pi_4` = 0.78539816339744830961566084582_fgsl_extended
- `real(fgsl_extended)`, parameter, public `m_sqrtpi` = 1.77245385090551602729816748334_fgsl_extended
- `real(fgsl_extended)`, parameter, public `m_2_sqrtpi` = 1.12837916709551257389615890312_fgsl_extended
- `real(fgsl_extended)`, parameter, public `m_1_pi` = 0.31830988618379067153776752675_fgsl_extended
- `real(fgsl_extended)`, parameter, public `m_2_pi` = 0.63661977236758134307553505349_fgsl_extended
- `real(fgsl_extended)`, parameter, public `m_ln10` = 2.30258509299404568401799145468_fgsl_extended
- `real(fgsl_extended)`, parameter, public `m_ln2` = 0.69314718055994530941723212146_fgsl_extended
- `real(fgsl_extended)`, parameter, public `m_lnp1` = 1.14472988584940017414342735135_fgsl_extended
- `real(fgsl_extended)`, parameter, public `m_euler` = 0.57721566490153286060651209008_fgsl_extended
- `real(fgsl_double)`, parameter, public `fgsl_const_num_fine_structure` = 7.297352533E-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_avogadro` = 6.02214199E23_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_yotta` = 1e24_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_zetta` = 1e21_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_exa` = 1e18_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_peta` = 1e15_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_tera` = 1e12_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_giga` = 1e9_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_mega` = 1e6_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_kilo` = 1e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_milli` = 1e-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_micro` = 1e-6_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_nano` = 1e-9_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_pico` = 1e-12_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_femto` = 1e-15_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_num_atto` = 1e-18_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_numzepto` = 1e-21_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_numyocto` = 1e-24_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_speed_of_light` = 2.99792458e8_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_gravitational_constant` = 6.673e-11_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_plancks_constant_h` = 6.62606896e-34_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_plancks_constant_hbar` = 1.05457162825e-34_fgsl_double↵
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_astronomical_unit` = 1.49597870691e11_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_light_year` = 9.46053620707e15_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_parsec` = 3.08567758135e16_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_grav_accel` = 9.80665e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_electron_volt` = 1.602176487e-19_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_mass_electron` = 9.10938188e-31_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_mass_muon` = 1.88353109e-28_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_mass_proton` = 1.67262158e-27_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_mass_neutron` = 1.67492716e-27_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_rydberg` = 2.17987196968e-18_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_boltzmann` = 1.3806504e-23_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_bohr_magneton` = 9.27400899e-24_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_nuclear_magneton` = 5.05078317e-27_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_electron_magnetic_moment` = 9.28476362e-24_fgsl_double↵
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_proton_magnetic_moment` = 1.410606633e-26_fgsl_double↵
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_molar_gas` = 8.314472e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_standard_gas_volume` = 2.2710981e-2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_minute` = 6e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_hour` = 3.6e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkssa_day` = 8.64e4_fgsl_double

- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_week` = 6.048e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_inch` = 2.54e-2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_foot` = 3.048e-1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_yard` = 9.144e-1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_mile` = 1.609344e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_nautical_mile` = 1.852e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_fathom` = 1.8288e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_mil` = 2.54e-5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_point` = 3.52777777778e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_texpoint` = 3.51459803515e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_micron` = 1e-6_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_angstrom` = 1e-10_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_hectare` = 1e4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_acre` = 4.04685642241e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_barn` = 1e-28_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_liter` = 1e-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_us_gallon` = 3.78541178402e-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_quart` = 9.46352946004e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_pint` = 4.73176473002e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_cup` = 2.36588236501e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_fluid_ounce` = 2.95735295626e-5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_tablespoon` = 1.47867647813e-5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_teaspoon` = 4.92892159375e-6_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_canadian_gallon` = 4.54609e-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_uk_gallon` = 4.546092e-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_miles_per_hour` = 4.4704e-1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_kilometers_per_hour` = 2.77777777778e-1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_knot` = 5.14444444444e-1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_pound_mass` = 4.5359237e-1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_ounce_mass` = 2.8349523125e-2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_ton` = 9.0718474e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_metric_ton` = 1e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_uk_ton` = 1.0160469088e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_troy_ounce` = 3.1103475e-2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_carat` = 2e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_unified_atomic_mass` = 1.660538782e-27_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_gram_force` = 9.80665e-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_pound_force` = 4.44822161526e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_kilopound_force` = 4.44822161526e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_poundal` = 1.38255e-1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_calorie` = 4.1868e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_btu` = 1.05505585262e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_therm` = 1.05506e8_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_horsepower` = 7.457e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_bar` = 1e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_std_atmosphere` = 1.01325e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_torr` = 1.33322368421e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_meter_of_mercury` = 1.33322368421e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_inch_of_mercury` = 3.38638815789e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_inch_of_water` = 2.490889e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_psi` = 6.89475729317e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_poise` = 1e-1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_stokes` = 1e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mksa_faraday` = 9.64853429775e4_fgsl_double

- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_electron_charge` = 1.602176487e-19_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_gauss` = 1e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_stilb` = 1e4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_lumen` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_lux` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_phot` = 1e4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_footcandle` = 1.076e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_lambert` = 1e4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_footlambert` = 1.07639104e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_curie` = 3.7e10_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_roentgen` = 2.58e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_rad` = 1e-2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_solar_mass` = 1.98892e30_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_bohr_radius` = 5.291772083e-11_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_newton` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_dyne` = 1e-5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_joule` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_erg` = 1e-7_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_stefan_boltzmann_constant` = 5.67040047374e-8_↵
fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_thomson_cross_section` = 6.65245893699e-29_fgsl_↵
_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_vacuum_permittivity` = 8.854187817e-12_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_vacuum_permeability` = 1.25663706144e-6_fgsl_↵
double
- `real(fgsl_double)`, parameter, public `fgsl_const_mkxa_debye` = 3.33564095198e-30_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_speed_of_light` = 2.99792458e10_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_gravitational_constant` = 6.673e-8_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_plancks_constant_h` = 6.62606896e-27_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_plancks_constant_hbar` = 1.05457162825e-27_fgsl_↵
double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_astronomical_unit` = 1.49597870691e13_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_light_year` = 9.46053620707e17_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_parsec` = 3.08567758135e18_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_grav_accel` = 9.80665e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_electron_volt` = 1.602176487e-12_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_mass_electron` = 9.10938188e-28_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_mass_muon` = 1.88353109e-25_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_mass_proton` = 1.67262158e-24_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_mass_neutron` = 1.67492716e-24_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_rydberg` = 2.17987196968e-11_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_boltzmann` = 1.3806504e-16_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_bohr_magneton` = 9.27400899e-21_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_nuclear_magneton` = 5.05078317e-24_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_electron_magnetic_moment` = 9.28476362e-21_fgsl_↵
_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_proton_magnetic_moment` = 1.410606633e-23_fgsl_↵
_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_molar_gas` = 8.314472e7_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_standard_gas_volume` = 2.2710981e4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_minute` = 6e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_hour` = 3.6e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_day` = 8.64e4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_week` = 6.048e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_inch` = 2.54e0_fgsl_double

- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_foot` = 3.048e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_yard` = 9.144e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_mile` = 1.609344e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_nautical_mile` = 1.852e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_fathom` = 1.8288e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_mil` = 2.54e-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_point` = 3.52777777778e-2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_texpoint` = 3.51459803515e-2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_micron` = 1e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_angstrom` = 1e-8_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_hectare` = 1e8_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_acre` = 4.04685642241e7_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_barn` = 1e-24_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_liter` = 1e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_us_gallon` = 3.78541178402e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_quart` = 9.46352946004e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_pint` = 4.73176473002e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_cup` = 2.36588236501e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_fluid_ounce` = 2.95735295626e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_tablespoon` = 1.47867647813e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_tspoon` = 4.92892159375e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_canadian_gallon` = 4.54609e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_uk_gallon` = 4.546092e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_miles_per_hour` = 4.4704e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_kilometers_per_hour` = 2.77777777778e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_knot` = 5.14444444444e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_pound_mass` = 4.5359237e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_ounce_mass` = 2.8349523125e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_ton` = 9.0718474e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_metric_ton` = 1e6_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_uk_ton` = 1.0160469088e6_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_troy_ounce` = 3.1103475e1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_carat` = 2e-1_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_unified_atomic_mass` = 1.660538782e-24_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_gram_force` = 9.80665e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_pound_force` = 4.44822161526e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_kilopound_force` = 4.44822161526e8_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_poundal` = 1.38255e4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_calorie` = 4.1868e7_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_btu` = 1.05505585262e10_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_therm` = 1.05506e15_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_horsepower` = 7.457e9_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_bar` = 1e6_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_std_atmosphere` = 1.01325e6_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_torr` = 1.33322368421e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_meter_of_mercury` = 1.33322368421e6_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_inch_of_mercury` = 3.38638815789e4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_inch_of_water` = 2.490889e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_psi` = 6.89475729317e4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_poise` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_stokes` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_faraday` = 9.64853429775e3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_electron_charge` = 1.602176487e-20_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_gauss` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsmstilb` = 1e0_fgsl_double

- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_lumen` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_lux` = 1e-4_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_phot` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_footcandle` = 1.076e-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_lambert` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_footlambert` = 1.07639104e-3_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_curie` = 3.7e10_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_roentgen` = 2.58e-8_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_rad` = 1e2_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_solar_mass` = 1.98892e33_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_bohr_radius` = 5.291772083e-9_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_newton` = 1e5_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_dyne` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_joule` = 1e7_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_erg` = 1e0_fgsl_double
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_stefan_boltzmann_constant` = 5.67040047374e-5_fgsl_double ↵
- `real(fgsl_double)`, parameter, public `fgsl_const_cgsm_thomson_cross_section` = 6.65245893699e-25_fgsl_double ↵
- `type(fgsl_mode_t)`, parameter, public `fgsl_prec_double` = `fgsl_mode_t`(0)
- `type(fgsl_mode_t)`, parameter, public `fgsl_prec_single` = `fgsl_mode_t`(1)
- `type(fgsl_mode_t)`, parameter, public `fgsl_prec_approx` = `fgsl_mode_t`(2)
- `type(fgsl_sf_legendre_t)`, parameter, public `fgsl_sf_legendre_schmidt` = `fgsl_sf_legendre_t`(0)
- `type(fgsl_sf_legendre_t)`, parameter, public `fgsl_sf_legendre_spharm` = `fgsl_sf_legendre_t`(1)
- `type(fgsl_sf_legendre_t)`, parameter, public `fgsl_sf_legendre_full` = `fgsl_sf_legendre_t`(2)
- `type(fgsl_sf_legendre_t)`, parameter, public `fgsl_sf_legendre_none` = `fgsl_sf_legendre_t`(3)
- `integer(fgsl_int)`, parameter, public `gsl_sf_legendre_schmidt` = 0
- `integer(fgsl_int)`, parameter, public `gsl_sf_legendre_spharm` = 1
- `integer(fgsl_int)`, parameter, public `gsl_sf_legendre_full` = 2
- `integer(fgsl_int)`, parameter, public `gsl_sf_legendre_none` = 3
- `type(fgsl_multilarge_linear_type)`, parameter, public `fgsl_multilarge_linear_normal` = `fgsl_multilarge_linear_type`(1)
- `type(fgsl_multilarge_linear_type)`, parameter, public `fgsl_multilarge_linear_tsqr` = `fgsl_multilarge_linear_type`(2)
- `type(fgsl_interp_type)`, parameter, public `fgsl_interp_linear` = `fgsl_interp_type`(1)
- `type(fgsl_interp_type)`, parameter, public `fgsl_interp_polynomial` = `fgsl_interp_type`(2)
- `type(fgsl_interp_type)`, parameter, public `fgsl_interp_cspline` = `fgsl_interp_type`(3)
- `type(fgsl_interp_type)`, parameter, public `fgsl_interp_cspline_periodic` = `fgsl_interp_type`(4)
- `type(fgsl_interp_type)`, parameter, public `fgsl_interp_akima` = `fgsl_interp_type`(5)
- `type(fgsl_interp_type)`, parameter, public `fgsl_interp_akima_periodic` = `fgsl_interp_type`(6)
- `type(fgsl_interp_type)`, parameter, public `fgsl_interp_steffen` = `fgsl_interp_type`(7)
- `type(fgsl_interp2d_type)`, parameter, public `fgsl_interp2d_bilinear` = `fgsl_interp2d_type`(1)
- `type(fgsl_interp2d_type)`, parameter, public `fgsl_interp2d_bicubic` = `fgsl_interp2d_type`(2)
- `type(fgsl_multifit_robust_type)`, parameter, public `fgsl_multifit_robust_default` = `fgsl_multifit_robust_type`(1)
- `type(fgsl_multifit_robust_type)`, parameter, public `fgsl_multifit_robust_bisquare` = `fgsl_multifit_robust_type`(2)
- `type(fgsl_multifit_robust_type)`, parameter, public `fgsl_multifit_robust_cauchy` = `fgsl_multifit_robust_type`(3)
- `type(fgsl_multifit_robust_type)`, parameter, public `fgsl_multifit_robust_fair` = `fgsl_multifit_robust_type`(4)
- `type(fgsl_multifit_robust_type)`, parameter, public `fgsl_multifit_robust_huber` = `fgsl_multifit_robust_type`(5)
- `type(fgsl_multifit_robust_type)`, parameter, public `fgsl_multifit_robust_ols` = `fgsl_multifit_robust_type`(6)
- `type(fgsl_multifit_robust_type)`, parameter, public `fgsl_multifit_robust_welsch` = `fgsl_multifit_robust_type`(7)
- `integer(fgsl_int)`, parameter, public `cblasrowmajor` = 101
- `integer(fgsl_int)`, parameter, public `cblascolmajor` = 102
- `integer(fgsl_int)`, parameter, public `cblasnotrans` = 111
- `integer(fgsl_int)`, parameter, public `cblastrans` = 112
- `integer(fgsl_int)`, parameter, public `cblasconjtrans` = 113
- `integer(fgsl_int)`, parameter, public `cblasupper` = 121
- `integer(fgsl_int)`, parameter, public `cblaslower` = 122

- integer([fgsl_int](#)), parameter, public [cblasnonunit](#) = 131
- integer([fgsl_int](#)), parameter, public [cblasunit](#) = 132
- integer([fgsl_int](#)), parameter, public [cblasleft](#) = 141
- integer([fgsl_int](#)), parameter, public [cblasright](#) = 142
- integer([c_int](#)), parameter, public [fgsl_eigen_sort_val_asc](#) = 0
- integer([c_int](#)), parameter, public [fgsl_eigen_sort_val_desc](#) = 1
- integer([c_int](#)), parameter, public [fgsl_eigen_sort_abs_asc](#) = 2
- integer([c_int](#)), parameter, public [fgsl_eigen_sort_abs_desc](#) = 3
- integer([fgsl_int](#)), parameter, public [fgsl_integ_gauss15](#) = 1
- integer([fgsl_int](#)), parameter, public [fgsl_integ_gauss21](#) = 2
- integer([fgsl_int](#)), parameter, public [fgsl_integ_gauss31](#) = 3
- integer([fgsl_int](#)), parameter, public [fgsl_integ_gauss41](#) = 4
- integer([fgsl_int](#)), parameter, public [fgsl_integ_gauss51](#) = 5
- integer([fgsl_int](#)), parameter, public [fgsl_integ_gauss61](#) = 6
- integer([fgsl_int](#)), parameter, public [fgsl_integ_cosine](#) = 0
- integer([fgsl_int](#)), parameter, public [fgsl_integ_sine](#) = 1
- integer([fgsl_int](#)), parameter, public [fgsl_integration_fixed_legendre](#) = 1
- integer([fgsl_int](#)), parameter, public [fgsl_integration_fixed_chebyshev](#) = 2
- integer([fgsl_int](#)), parameter, public [fgsl_integration_fixed_gegenbauer](#) = 3
- integer([fgsl_int](#)), parameter, public [fgsl_integration_fixed_jacobi](#) = 4
- integer([fgsl_int](#)), parameter, public [fgsl_integration_fixed_laguerre](#) = 5
- integer([fgsl_int](#)), parameter, public [fgsl_integration_fixed_hermite](#) = 6
- integer([fgsl_int](#)), parameter, public [fgsl_integration_fixed_exponential](#) = 7
- integer([fgsl_int](#)), parameter, public [fgsl_integration_fixed_rational](#) = 8
- integer([fgsl_int](#)), parameter, public [fgsl_integration_fixed_chebyshev2](#) = 9
- type([fgsl_rng_type](#)), public [fgsl_rng_default](#) = [fgsl_rng_type](#)([c_null_ptr](#), -1)
- type([fgsl_rng_type](#)), public [fgsl_rng_borosh13](#) = [fgsl_rng_type](#)([c_null_ptr](#), 1)
- type([fgsl_rng_type](#)), public [fgsl_rng_coveyou](#) = [fgsl_rng_type](#)([c_null_ptr](#), 2)
- type([fgsl_rng_type](#)), public [fgsl_rng_cmrg](#) = [fgsl_rng_type](#)([c_null_ptr](#), 3)
- type([fgsl_rng_type](#)), public [fgsl_rng_fishman18](#) = [fgsl_rng_type](#)([c_null_ptr](#), 4)
- type([fgsl_rng_type](#)), public [fgsl_rng_fishman20](#) = [fgsl_rng_type](#)([c_null_ptr](#), 5)
- type([fgsl_rng_type](#)), public [fgsl_rng_fishman2x](#) = [fgsl_rng_type](#)([c_null_ptr](#), 6)
- type([fgsl_rng_type](#)), public [fgsl_rng_gfsr4](#) = [fgsl_rng_type](#)([c_null_ptr](#), 7)
- type([fgsl_rng_type](#)), public [fgsl_rng_knuthran](#) = [fgsl_rng_type](#)([c_null_ptr](#), 8)
- type([fgsl_rng_type](#)), public [fgsl_rng_knuthran2](#) = [fgsl_rng_type](#)([c_null_ptr](#), 9)
- type([fgsl_rng_type](#)), public [fgsl_rng_lecuyer21](#) = [fgsl_rng_type](#)([c_null_ptr](#), 10)
- type([fgsl_rng_type](#)), public [fgsl_rng_minstd](#) = [fgsl_rng_type](#)([c_null_ptr](#), 11)
- type([fgsl_rng_type](#)), public [fgsl_rng_mrg](#) = [fgsl_rng_type](#)([c_null_ptr](#), 12)
- type([fgsl_rng_type](#)), public [fgsl_rng_mt19937](#) = [fgsl_rng_type](#)([c_null_ptr](#), 13)
- type([fgsl_rng_type](#)), public [fgsl_rng_mt19937_1999](#) = [fgsl_rng_type](#)([c_null_ptr](#), 14)
- type([fgsl_rng_type](#)), public [fgsl_rng_mt19937_1998](#) = [fgsl_rng_type](#)([c_null_ptr](#), 15)
- type([fgsl_rng_type](#)), public [fgsl_rng_r250](#) = [fgsl_rng_type](#)([c_null_ptr](#), 16)
- type([fgsl_rng_type](#)), public [fgsl_rng_ran0](#) = [fgsl_rng_type](#)([c_null_ptr](#), 17)
- type([fgsl_rng_type](#)), public [fgsl_rng_ran1](#) = [fgsl_rng_type](#)([c_null_ptr](#), 18)
- type([fgsl_rng_type](#)), public [fgsl_rng_ran2](#) = [fgsl_rng_type](#)([c_null_ptr](#), 19)
- type([fgsl_rng_type](#)), public [fgsl_rng_ran3](#) = [fgsl_rng_type](#)([c_null_ptr](#), 20)
- type([fgsl_rng_type](#)), public [fgsl_rng_rand](#) = [fgsl_rng_type](#)([c_null_ptr](#), 21)
- type([fgsl_rng_type](#)), public [fgsl_rng_rand48](#) = [fgsl_rng_type](#)([c_null_ptr](#), 22)
- type([fgsl_rng_type](#)), public [fgsl_rng_random128_bsd](#) = [fgsl_rng_type](#)([c_null_ptr](#), 23)
- type([fgsl_rng_type](#)), public [fgsl_rng_random128_glibc2](#) = [fgsl_rng_type](#)([c_null_ptr](#), 24)
- type([fgsl_rng_type](#)), public [fgsl_rng_random128_libc5](#) = [fgsl_rng_type](#)([c_null_ptr](#), 25)
- type([fgsl_rng_type](#)), public [fgsl_rng_random256_bsd](#) = [fgsl_rng_type](#)([c_null_ptr](#), 26)
- type([fgsl_rng_type](#)), public [fgsl_rng_random256_glibc2](#) = [fgsl_rng_type](#)([c_null_ptr](#), 27)
- type([fgsl_rng_type](#)), public [fgsl_rng_random256_libc5](#) = [fgsl_rng_type](#)([c_null_ptr](#), 28)
- type([fgsl_rng_type](#)), public [fgsl_rng_random32_bsd](#) = [fgsl_rng_type](#)([c_null_ptr](#), 29)

- `type(fgsl_rng_type)`, public `fgsl_rng_random32_glibc2 = fgsl_rng_type(c_null_ptr, 30)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random32_libc5 = fgsl_rng_type(c_null_ptr, 31)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random64_bsd = fgsl_rng_type(c_null_ptr, 32)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random64_glibc2 = fgsl_rng_type(c_null_ptr, 33)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random64_libc5 = fgsl_rng_type(c_null_ptr, 34)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random8_bsd = fgsl_rng_type(c_null_ptr, 35)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random8_glibc2 = fgsl_rng_type(c_null_ptr, 36)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random8_libc5 = fgsl_rng_type(c_null_ptr, 37)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random_bsd = fgsl_rng_type(c_null_ptr, 38)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random_glibc2 = fgsl_rng_type(c_null_ptr, 39)`
- `type(fgsl_rng_type)`, public `fgsl_rng_random_libc5 = fgsl_rng_type(c_null_ptr, 40)`
- `type(fgsl_rng_type)`, public `fgsl_rng_randu = fgsl_rng_type(c_null_ptr, 41)`
- `type(fgsl_rng_type)`, public `fgsl_rng_ranf = fgsl_rng_type(c_null_ptr, 42)`
- `type(fgsl_rng_type)`, public `fgsl_rng_ranlux = fgsl_rng_type(c_null_ptr, 43)`
- `type(fgsl_rng_type)`, public `fgsl_rng_ranlux389 = fgsl_rng_type(c_null_ptr, 44)`
- `type(fgsl_rng_type)`, public `fgsl_rng_ranlxd1 = fgsl_rng_type(c_null_ptr, 45)`
- `type(fgsl_rng_type)`, public `fgsl_rng_ranlxd2 = fgsl_rng_type(c_null_ptr, 46)`
- `type(fgsl_rng_type)`, public `fgsl_rng_ranlxs0 = fgsl_rng_type(c_null_ptr, 47)`
- `type(fgsl_rng_type)`, public `fgsl_rng_ranlxs1 = fgsl_rng_type(c_null_ptr, 48)`
- `type(fgsl_rng_type)`, public `fgsl_rng_ranlxs2 = fgsl_rng_type(c_null_ptr, 49)`
- `type(fgsl_rng_type)`, public `fgsl_rng_ranmar = fgsl_rng_type(c_null_ptr, 50)`
- `type(fgsl_rng_type)`, public `fgsl_rng_slatec = fgsl_rng_type(c_null_ptr, 51)`
- `type(fgsl_rng_type)`, public `fgsl_rng_taus = fgsl_rng_type(c_null_ptr, 52)`
- `type(fgsl_rng_type)`, public `fgsl_rng_taus2 = fgsl_rng_type(c_null_ptr, 53)`
- `type(fgsl_rng_type)`, public `fgsl_rng_taus113 = fgsl_rng_type(c_null_ptr, 54)`
- `type(fgsl_rng_type)`, public `fgsl_rng_transputer = fgsl_rng_type(c_null_ptr, 55)`
- `type(fgsl_rng_type)`, public `fgsl_rng_tt800 = fgsl_rng_type(c_null_ptr, 56)`
- `type(fgsl_rng_type)`, public `fgsl_rng_uni = fgsl_rng_type(c_null_ptr, 57)`
- `type(fgsl_rng_type)`, public `fgsl_rng_uni32 = fgsl_rng_type(c_null_ptr, 58)`
- `type(fgsl_rng_type)`, public `fgsl_rng_vax = fgsl_rng_type(c_null_ptr, 59)`
- `type(fgsl_rng_type)`, public `fgsl_rng_waterman14 = fgsl_rng_type(c_null_ptr, 60)`
- `type(fgsl_rng_type)`, public `fgsl_rng_zuf = fgsl_rng_type(c_null_ptr, 61)`
- `type(fgsl_rng_type)`, public `fgsl_rng_knuthran2002 = fgsl_rng_type(c_null_ptr, 62)`
- `integer(fgsl_long)`, bind(C, name='fgsl_rng_default_seed'), public `fgsl_rng_default_seed`
- `type(fgsl_qrng_type)`, parameter, public `fgsl_qrng_niederreiter_2 = fgsl_qrng_type(1)`
- `type(fgsl_qrng_type)`, parameter, public `fgsl_qrng_sobol = fgsl_qrng_type(2)`
- `type(fgsl_qrng_type)`, parameter, public `fgsl_qrng_halton = fgsl_qrng_type(3)`
- `type(fgsl_qrng_type)`, parameter, public `fgsl_qrng_reversehalton = fgsl_qrng_type(4)`
- `integer(c_int)`, parameter, public `fgsl_vegas_mode_importance = 1`
- `integer(c_int)`, parameter, public `fgsl_vegas_mode_importance_only = 0`
- `integer(c_int)`, parameter, public `fgsl_vegas_mode_stratified = -1`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_rk2 = fgsl_odeiv2_step_type(1)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_rk4 = fgsl_odeiv2_step_type(2)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_rkf45 = fgsl_odeiv2_step_type(3)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_rkck = fgsl_odeiv2_step_type(4)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_rk8pd = fgsl_odeiv2_step_type(5)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_rk1imp = fgsl_odeiv2_step_type(6)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_rk2imp = fgsl_odeiv2_step_type(7)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_rk4imp = fgsl_odeiv2_step_type(8)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_bsimp = fgsl_odeiv2_step_type(9)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_msadams = fgsl_odeiv2_step_type(10)`
- `type(fgsl_odeiv2_step_type)`, parameter, public `fgsl_odeiv2_step_msbd = fgsl_odeiv2_step_type(11)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_rk2 = fgsl_odeiv_step_type(1)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_rk4 = fgsl_odeiv_step_type(2)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_rkf45 = fgsl_odeiv_step_type(3)`

- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_rkck = fgsl_odeiv_step_type(4)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_rk8pd = fgsl_odeiv_step_type(5)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_rk2imp = fgsl_odeiv_step_type(6)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_rk2simp = fgsl_odeiv_step_type(7)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_rk4imp = fgsl_odeiv_step_type(8)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_bsimp = fgsl_odeiv_step_type(9)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_gear1 = fgsl_odeiv_step_type(10)`
- `type(fgsl_odeiv_step_type)`, parameter, public `fgsl_odeiv_step_gear2 = fgsl_odeiv_step_type(11)`
- `integer(fgsl_int)`, parameter, public `fgsl_odeiv_hadj_inc = 1`
- `integer(fgsl_int)`, parameter, public `fgsl_odeiv_hadj_nil = 0`
- `integer(fgsl_int)`, parameter, public `fgsl_odeiv_hadj_dec = -1`
- `type(fgsl_wavelet_type)`, parameter, public `fgsl_wavelet_daubechies = fgsl_wavelet_type(1)`
- `type(fgsl_wavelet_type)`, parameter, public `fgsl_wavelet_daubechies_centered = fgsl_wavelet_type(2)`
- `type(fgsl_wavelet_type)`, parameter, public `fgsl_wavelet_haar = fgsl_wavelet_type(3)`
- `type(fgsl_wavelet_type)`, parameter, public `fgsl_wavelet_haar_centered = fgsl_wavelet_type(4)`
- `type(fgsl_wavelet_type)`, parameter, public `fgsl_wavelet_bspline = fgsl_wavelet_type(5)`
- `type(fgsl_wavelet_type)`, parameter, public `fgsl_wavelet_bspline_centered = fgsl_wavelet_type(6)`
- `type(fgsl_root_fsolver_type)`, parameter, public `fgsl_root_fsolver_bisection = fgsl_root_fsolver_type(1)`
- `type(fgsl_root_fsolver_type)`, parameter, public `fgsl_root_fsolver_brent = fgsl_root_fsolver_type(2)`
- `type(fgsl_root_fsolver_type)`, parameter, public `fgsl_root_fsolver_falsepos = fgsl_root_fsolver_type(3)`
- `type(fgsl_root_fdfsolver_type)`, parameter, public `fgsl_root_fdfsolver_newton = fgsl_root_fdfsolver_type(1)`
- `type(fgsl_root_fdfsolver_type)`, parameter, public `fgsl_root_fdfsolver_secant = fgsl_root_fdfsolver_type(2)`
- `type(fgsl_root_fdfsolver_type)`, parameter, public `fgsl_root_fdfsolver_steffenson = fgsl_root_fdfsolver_type(3)`
- `type(fgsl_min_fminimizer_type)`, parameter, public `fgsl_min_fminimizer_goldensection = fgsl_min_fminimizer_type(1)`
- `type(fgsl_min_fminimizer_type)`, parameter, public `fgsl_min_fminimizer_brent = fgsl_min_fminimizer_type(2)`
- `type(fgsl_min_fminimizer_type)`, parameter, public `fgsl_min_fminimizer_quad_golden = fgsl_min_fminimizer_type(3)`
- `type(fgsl_multiroot_fsolver_type)`, parameter, public `fgsl_multiroot_fsolver_dnewton = fgsl_multiroot_fsolver_type(1)`
- `type(fgsl_multiroot_fsolver_type)`, parameter, public `fgsl_multiroot_fsolver_broyden = fgsl_multiroot_fsolver_type(2)`
- `type(fgsl_multiroot_fsolver_type)`, parameter, public `fgsl_multiroot_fsolver_hybrid = fgsl_multiroot_fsolver_type(3)`
- `type(fgsl_multiroot_fsolver_type)`, parameter, public `fgsl_multiroot_fsolver_hybrids = fgsl_multiroot_fsolver_type(4)`
- `type(fgsl_multiroot_fdfsolver_type)`, parameter, public `fgsl_multiroot_fdfsolver_newton = fgsl_multiroot_fdfsolver_type(1)`
- `type(fgsl_multiroot_fdfsolver_type)`, parameter, public `fgsl_multiroot_fdfsolver_gnewton = fgsl_multiroot_fdfsolver_type(2)`
- `type(fgsl_multiroot_fdfsolver_type)`, parameter, public `fgsl_multiroot_fdfsolver_hybridj = fgsl_multiroot_fdfsolver_type(3)`
- `type(fgsl_multiroot_fdfsolver_type)`, parameter, public `fgsl_multiroot_fdfsolver_hybridjs = fgsl_multiroot_fdfsolver_type(4)`
- `type(fgsl_multimin_fminimizer_type)`, parameter, public `fgsl_multimin_fminimizer_nmsimplex = fgsl_multimin_fminimizer_type(1)`
- `type(fgsl_multimin_fminimizer_type)`, parameter, public `fgsl_multimin_fminimizer_nmsimplex2 = fgsl_multimin_fminimizer_type(2)`
- `type(fgsl_multimin_fminimizer_type)`, parameter, public `fgsl_multimin_fminimizer_nmsimplex2rand = fgsl_multimin_fminimizer_type(3)`
- `type(fgsl_multimin_fdfminimizer_type)`, parameter, public `fgsl_multimin_fdfminimizer_steepest_descent = fgsl_multimin_fdfminimizer_type(1)`
- `type(fgsl_multimin_fdfminimizer_type)`, parameter, public `fgsl_multimin_fdfminimizer_conjugate_pr = fgsl_multimin_fdfminimizer_type(2)`
- `type(fgsl_multimin_fdfminimizer_type)`, parameter, public `fgsl_multimin_fdfminimizer_conjugate_fr = fgsl_multimin_fdfminimizer_type(3)`
- `type(fgsl_multimin_fdfminimizer_type)`, parameter, public `fgsl_multimin_fdfminimizer_vector_bfgs = fgsl_multimin_fdfminimizer_type(4)`
- `type(fgsl_multimin_fdfminimizer_type)`, parameter, public `fgsl_multimin_fdfminimizer_vector_bfgs2 = fgsl_multimin_fdfminimizer_type(5)`
- `type(fgsl_multifit_nlinear_trs)`, parameter, public `fgsl_multifit_nlinear_trs_lm = fgsl_multifit_nlinear_trs(1)`
- `type(fgsl_multifit_nlinear_trs)`, parameter, public `fgsl_multifit_nlinear_trs_lmaccel = fgsl_multifit_nlinear_trs(2)`
- `type(fgsl_multifit_nlinear_trs)`, parameter, public `fgsl_multifit_nlinear_trs_dogleg = fgsl_multifit_nlinear_trs(3)`
- `type(fgsl_multifit_nlinear_trs)`, parameter, public `fgsl_multifit_nlinear_trs_ddogleg = fgsl_multifit_nlinear_trs(4)`
- `type(fgsl_multifit_nlinear_trs)`, parameter, public `fgsl_multifit_nlinear_trs_subspace2d = fgsl_multifit_nlinear_trs(5)`

- `type(fgsl_multilarge_nlinear_trs)`, parameter, public `fgsl_multilarge_nlinear_trs_lm` = `fgsl_multilarge_nlinear_trs(1)`
 - `type(fgsl_multilarge_nlinear_trs)`, parameter, public `fgsl_multilarge_nlinear_trs_lmaccel` = `fgsl_multilarge_nlinear_trs(2)`
 - `type(fgsl_multilarge_nlinear_trs)`, parameter, public `fgsl_multilarge_nlinear_trs_dogleg` = `fgsl_multilarge_nlinear_trs(3)`
 - `type(fgsl_multilarge_nlinear_trs)`, parameter, public `fgsl_multilarge_nlinear_trs_ddogleg` = `fgsl_multilarge_nlinear_trs(4)`
 - `type(fgsl_multilarge_nlinear_trs)`, parameter, public `fgsl_multilarge_nlinear_trs_subspace2d` = `fgsl_multilarge_nlinear_trs(5)`
 - `type(fgsl_multilarge_nlinear_trs)`, parameter, public `fgsl_multilarge_nlinear_trs_cgst` = `fgsl_multilarge_nlinear_trs(6)`
 - `type(fgsl_multifit_nlinear_scale)`, parameter, public `fgsl_multifit_nlinear_scale_levenberg` = `fgsl_multifit_nlinear_scale(1)`
 - `type(fgsl_multifit_nlinear_scale)`, parameter, public `fgsl_multifit_nlinear_scale_marquardt` = `fgsl_multifit_nlinear_scale(2)`
 - `type(fgsl_multifit_nlinear_scale)`, parameter, public `fgsl_multifit_nlinear_scale_more` = `fgsl_multifit_nlinear_scale(3)`
 - `type(fgsl_multilarge_nlinear_scale)`, parameter, public `fgsl_multilarge_nlinear_scale_levenberg` = `fgsl_multilarge_nlinear_scale(1)`
 - `type(fgsl_multilarge_nlinear_scale)`, parameter, public `fgsl_multilarge_nlinear_scale_marquardt` = `fgsl_multilarge_nlinear_scale(2)`
 - `type(fgsl_multilarge_nlinear_scale)`, parameter, public `fgsl_multilarge_nlinear_scale_more` = `fgsl_multilarge_nlinear_scale(3)`
 - `type(fgsl_multifit_nlinear_solver)`, parameter, public `fgsl_multifit_nlinear_solver_cholesky` = `fgsl_multifit_nlinear_solver(1)`
 - `type(fgsl_multifit_nlinear_solver)`, parameter, public `fgsl_multifit_nlinear_solver_qr` = `fgsl_multifit_nlinear_solver(2)`
 - `type(fgsl_multifit_nlinear_solver)`, parameter, public `fgsl_multifit_nlinear_solver_svd` = `fgsl_multifit_nlinear_solver(3)`
 - `integer(fgsl_int)`, parameter, public `fgsl_multifit_nlinear_fwdiff` = 0
 - `integer(fgsl_int)`, parameter, public `fgsl_multifit_nlinear_ctrdiff` = 1
 - `type(fgsl_multilarge_nlinear_solver)`, parameter, public `fgsl_multilarge_nlinear_solver_cholesky` = `fgsl_multilarge_nlinear_solver(1)`
 - `type(fgsl_multifit_fdfsolver_type)`, parameter, public `fgsl_multifit_fdfsolver_lmder` = `fgsl_multifit_fdfsolver_type(1)`
 - `type(fgsl_multifit_fdfsolver_type)`, parameter, public `fgsl_multifit_fdfsolver_lmsder` = `fgsl_multifit_fdfsolver_type(2)`
 - `type(fgsl_multifit_fdfsolver_type)`, parameter, public `fgsl_multifit_fdfsolver_lmniel` = `fgsl_multifit_fdfsolver_type(3)`
 - `integer(fgsl_size_t)`, parameter, public `fgsl_spmatrix_triplet` = 0
 - `integer(fgsl_size_t)`, parameter, public `fgsl_spmatrix_ccs` = 1
 - `integer(fgsl_size_t)`, parameter, public `fgsl_spmatrix_crs` = 2
 - `integer(fgsl_size_t)`, parameter, public `fgsl_spmatrix_type_coo` = `fgsl_spmatrix_triplet`
 - `integer(fgsl_size_t)`, parameter, public `fgsl_spmatrix_type_csc` = `fgsl_spmatrix_ccs`
 - `integer(fgsl_size_t)`, parameter, public `fgsl_spmatrix_type_csr` = `fgsl_spmatrix_crs`
 - `type(fgsl_splinalg_itersolve_type)`, parameter, public `fgsl_splinalg_itersolve_gmres` = `fgsl_splinalg_itersolve_type(1)`
 - `integer(fgsl_int)`, parameter, public `fgsl_movstat_end_padzero` = 0
 - `integer(fgsl_int)`, parameter, public `fgsl_movstat_end_padvalue` = 1
 - `integer(fgsl_int)`, parameter, public `fgsl_movstat_end_truncate` = 2
 - `integer(fgsl_int)`, parameter, public `fgsl_filter_end_padzero` = 0
- Note: `fgsl_movstat_accum` is not matched since the publicized interface does not make explicit use of accumulators.*
- `integer(fgsl_int)`, parameter, public `fgsl_filter_end_padvalue` = 1
 - `integer(fgsl_int)`, parameter, public `fgsl_filter_end_truncate` = 2
 - `integer(fgsl_int)`, parameter, public `fgsl_filter_scale_mad` = 0
 - `integer(fgsl_int)`, parameter, public `fgsl_filter_scale_iqr` = 1
 - `integer(fgsl_int)`, parameter, public `fgsl_filter_scale_sn` = 2
 - `integer(fgsl_int)`, parameter, public `fgsl_filter_scale_qn` = 3

47.1.1 Variable Documentation

47.1.1.1 cblascolmajor

```
integer(fgsl_int), parameter, public fgsl::cblascolmajor = 102
```

47.1.1.2 cblasconjtrans

```
integer(fgsl_int), parameter, public fgsl::cblasconjtrans = 113
```

47.1.1.3 cblasleft

```
integer(fgsl_int), parameter, public fgsl::cblasleft = 141
```

47.1.1.4 cblaslower

```
integer(fgsl_int), parameter, public fgsl::cblaslower = 122
```

47.1.1.5 cblasnonunit

```
integer(fgsl_int), parameter, public fgsl::cblasnonunit = 131
```

47.1.1.6 cblasnotrans

```
integer(fgsl_int), parameter, public fgsl::cblasnotrans = 111
```

47.1.1.7 cblasright

```
integer(fgsl_int), parameter, public fgsl::cblasright = 142
```

47.1.1.8 cblasrowmajor

```
integer(fgsl_int), parameter, public fgsl::cblasrowmajor = 101
```

47.1.1.9 cblastrans

```
integer(fgsl_int), parameter, public fgsl::cblastrans = 112
```

47.1.1.10 cblasunit

```
integer(fgsl_int), parameter, public fgsl::cblasunit = 132
```

47.1.1.11 cblasupper

```
integer(fgsl_int), parameter, public fgsl::cblasupper = 121
```

47.1.1.12 fgsl_char

```
integer, parameter, public fgsl::fgsl_char = c_char
```

47.1.1.13 fgsl_const_cgsm_acre

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_acre = 4.04685642241e7_fgsl_double
```

47.1.1.14 fgsl_const_cgsm_angstrom

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_angstrom = 1e-8_fgsl_double
```

47.1.1.15 fgsl_const_cgsm_astronomical_unit

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_astronomical_unit = 1.49597870691e13←  
_fgsl_double
```

47.1.1.16 fgsl_const_cgsm_bar

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_bar = 1e6_fgsl_double
```

47.1.1.17 fgsl_const_cgsm_barn

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_barn = 1e-24_fgsl_double
```

47.1.1.18 fgsl_const_cgsm_bohr_magneton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_bohr_magneton = 9.27400899e-21_↵  
fgsl_double
```

47.1.1.19 fgsl_const_cgsm_bohr_radius

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_bohr_radius = 5.291772083e-9_fgsl_↵  
_double
```

47.1.1.20 fgsl_const_cgsm_boltzmann

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_boltzmann = 1.3806504e-16_fgsl_↵  
double
```

47.1.1.21 fgsl_const_cgsm_btu

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_btu = 1.05505585262e10_fgsl_double
```

47.1.1.22 fgsl_const_cgsm_calorie

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_calorie = 4.1868e7_fgsl_double
```

47.1.1.23 fgsl_const_cgsm_canadian_gallon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_canadian_gallon = 4.54609e3_fgsl_double↵
```

47.1.1.24 fgsl_const_cgsm_carat

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_carat = 2e-1_fgsl_double
```

47.1.1.25 fgsl_const_cgsm_cup

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_cup = 2.36588236501e2_fgsl_double
```

47.1.1.26 fgsl_const_cgsm_curie

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_curie = 3.7e10_fgsl_double
```

47.1.1.27 fgsl_const_cgsm_day

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_day = 8.64e4_fgsl_double
```

47.1.1.28 fgsl_const_cgsm_dyne

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_dyne = 1e0_fgsl_double
```

47.1.1.29 fgsl_const_cgsm_electron_charge

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_electron_charge = 1.602176487e-20↵_fgsl_double
```

47.1.1.30 fgsl_const_cgsm_electron_magnetic_moment

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_electron_magnetic_moment = 9.↵  
28476362e-21_fgsl_double
```

47.1.1.31 fgsl_const_cgsm_electron_volt

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_electron_volt = 1.602176487e-12_↵  
fgsl_double
```

47.1.1.32 fgsl_const_cgsm_erg

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_erg = 1e0_fgsl_double
```

47.1.1.33 fgsl_const_cgsm_faraday

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_faraday = 9.64853429775e3_fgsl_↵  
double
```

47.1.1.34 fgsl_const_cgsm_fathom

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_fathom = 1.8288e2_fgsl_double
```

47.1.1.35 fgsl_const_cgsm_fluid_ounce

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_fluid_ounce = 2.95735295626e1_↵  
fgsl_double
```

47.1.1.36 fgsl_const_cgsm_foot

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_foot = 3.048e1_fgsl_double
```

47.1.1.37 fgsl_const_cgsm_footcandle

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_footcandle = 1.076e-3_fgsl_double
```

47.1.1.38 fgsl_const_cgsm_footlambert

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_footlambert = 1.07639104e-3_fgsl_double
```

47.1.1.39 fgsl_const_cgsm_gauss

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_gauss = 1e0_fgsl_double
```

47.1.1.40 fgsl_const_cgsm_gram_force

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_gram_force = 9.80665e2_fgsl_double
```

47.1.1.41 fgsl_const_cgsm_grav_accel

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_grav_accel = 9.80665e2_fgsl_double
```

47.1.1.42 fgsl_const_cgsm_gravitational_constant

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_gravitational_constant = 6.673e-8_fgsl_double
```

47.1.1.43 fgsl_const_cgsm_hectare

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_hectare = 1e8_fgsl_double
```

47.1.1.44 fgsl_const_cgsm_horsepower

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_horsepower = 7.457e9_fgsl_double
```

47.1.1.45 fgsl_const_cgsm_hour

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_hour = 3.6e3_fgsl_double
```

47.1.1.46 fgsl_const_cgsm_inch

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_inch = 2.54e0_fgsl_double
```

47.1.1.47 fgsl_const_cgsm_inch_of_mercury

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_inch_of_mercury = 3.38638815789e4↵  
_fgsl_double
```

47.1.1.48 fgsl_const_cgsm_inch_of_water

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_inch_of_water = 2.490889e3_fgsl↵  
double
```

47.1.1.49 fgsl_const_cgsm_joule

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_joule = 1e7_fgsl_double
```

47.1.1.50 fgsl_const_cgsm_kilometers_per_hour

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_kilometers_per_hour = 2.7777777778e1↵  
_fgsl_double
```


47.1.1.51 fgsl_const_cgsm_kilopound_force

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_kilopound_force = 4.44822161526e8↵  
_fgsl_double
```

47.1.1.52 fgsl_const_cgsm_knot

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_knot = 5.14444444444e1_fgsl_double
```

47.1.1.53 fgsl_const_cgsm_lambert

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_lambert = 1e0_fgsl_double
```

47.1.1.54 fgsl_const_cgsm_light_year

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_light_year = 9.46053620707e17_↵  
fgsl_double
```

47.1.1.55 fgsl_const_cgsm_liter

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_liter = 1e3_fgsl_double
```

47.1.1.56 fgsl_const_cgsm_lumen

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_lumen = 1e0_fgsl_double
```

47.1.1.57 fgsl_const_cgsm_lux

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_lux = 1e-4_fgsl_double
```

47.1.1.58 fgsl_const_cgsm_mass_electron

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mass_electron = 9.10938188e-28_↵  
fgsl_double
```

47.1.1.59 fgsl_const_cgsm_mass_muon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mass_muon = 1.88353109e-25_fgsl_↵  
double
```

47.1.1.60 fgsl_const_cgsm_mass_neutron

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mass_neutron = 1.67492716e-24_↵  
fgsl_double
```

47.1.1.61 fgsl_const_cgsm_mass_proton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mass_proton = 1.67262158e-24_fgsl_↵  
_double
```

47.1.1.62 fgsl_const_cgsm_meter_of_mercury

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_meter_of_mercury = 1.33322368421e6_↵  
_fgsl_double
```

47.1.1.63 fgsl_const_cgsm_metric_ton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_metric_ton = 1e6_fgsl_double
```

47.1.1.64 fgsl_const_cgsm_micron

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_micron = 1e-4_fgsl_double
```

47.1.1.65 fgsl_const_cgsm_mil

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mil = 2.54e-3_fgsl_double
```

47.1.1.66 fgsl_const_cgsm_mile

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mile = 1.609344e5_fgsl_double
```

47.1.1.67 fgsl_const_cgsm_miles_per_hour

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_miles_per_hour = 4.4704e1_fgsl_double
```

47.1.1.68 fgsl_const_cgsm_minute

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_minute = 6e1_fgsl_double
```

47.1.1.69 fgsl_const_cgsm_molar_gas

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_molar_gas = 8.314472e7_fgsl_double
```

47.1.1.70 fgsl_const_cgsm_nautical_mile

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_nautical_mile = 1.852e5_fgsl_double
```

47.1.1.71 fgsl_const_cgsm_newton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_newton = 1e5_fgsl_double
```

47.1.1.72 fgsl_const_cgsm_nuclear_magneton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_nuclear_magneton = 5.05078317e-24↵  
_fgsl_double
```

47.1.1.73 fgsl_const_cgsm_ounce_mass

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_ounce_mass = 2.8349523125e1_fgsl_↵  
double
```

47.1.1.74 fgsl_const_cgsm_parsec

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_parsec = 3.08567758135e18_fgsl_↵  
double
```

47.1.1.75 fgsl_const_cgsm_phot

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_phot = 1e0_fgsl_double
```

47.1.1.76 fgsl_const_cgsm_pint

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_pint = 4.73176473002e2_fgsl_double
```

47.1.1.77 fgsl_const_cgsm_plancks_constant_h

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_plancks_constant_h = 6.62606896e-27↵  
_fgsl_double
```

47.1.1.78 fgsl_const_cgsm_plancks_constant_hbar

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_plancks_constant_hbar = 1.05457162825e-27↵  
_fgsl_double
```

47.1.1.79 fgsl_const_cgsm_point

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_point = 3.52777777778e-2_fgsl_↵  
double
```

47.1.1.80 fgsl_const_cgsm_poise

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_poise = 1e0_fgsl_double
```

47.1.1.81 fgsl_const_cgsm_pound_force

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_pound_force = 4.44822161526e5_↵  
fgsl_double
```

47.1.1.82 fgsl_const_cgsm_pound_mass

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_pound_mass = 4.5359237e2_fgsl_↵  
double
```

47.1.1.83 fgsl_const_cgsm_poundal

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_poundal = 1.38255e4_fgsl_double
```

47.1.1.84 fgsl_const_cgsm_proton_magnetic_moment

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_proton_magnetic_moment = 1.410606633e-23_↵  
_fgsl_double
```

47.1.1.85 fgsl_const_cgsm_psi

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_psi = 6.89475729317e4_fgsl_double
```

47.1.1.86 fgsl_const_cgsm_quart

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_quart = 9.46352946004e2_fgsl_double
```

47.1.1.87 fgsl_const_cgsm_rad

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_rad = 1e2_fgsl_double
```

47.1.1.88 fgsl_const_cgsm_roentgen

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_roentgen = 2.58e-8_fgsl_double
```

47.1.1.89 fgsl_const_cgsm_rydberg

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_rydberg = 2.17987196968e-11_fgsl_↵  
double
```

47.1.1.90 fgsl_const_cgsm_solar_mass

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_solar_mass = 1.98892e33_fgsl_double
```

47.1.1.91 fgsl_const_cgsm_speed_of_light

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_speed_of_light = 2.99792458e10_↵  
fgsl_double
```

47.1.1.92 fgsl_const_cgsm_standard_gas_volume

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_standard_gas_volume = 2.2710981e4_↵  
_fgsl_double
```

47.1.1.93 fgsl_const_cgsm_std_atmosphere

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_std_atmosphere = 1.01325e6_fgsl_↵  
double
```

47.1.1.94 fgsl_const_cgsm_stefan_boltzmann_constant

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_stefan_boltzmann_constant = 5.↵  
67040047374e-5_fgsl_double
```

47.1.1.95 fgsl_const_cgsmstilb

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsmstilb = 1e0_fgsl_double
```

47.1.1.96 fgsl_const_cgsmstokes

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsmstokes = 1e0_fgsl_double
```

47.1.1.97 fgsl_const_cgsmtablespoon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsmtablespoon = 1.47867647813e1_fgsl_↵  
_double
```

47.1.1.98 fgsl_const_cgsmteaspoon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsmteaspoon = 4.92892159375e0_fgsl_↵  
double
```

47.1.1.99 fgsl_const_cgsmtexpoint

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsmtexpoint = 3.51459803515e-2_fgsl_↵  
double
```

47.1.1.100 fgsl_const_cgsm_therm

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_therm = 1.05506e15_fgsl_double
```

47.1.1.101 fgsl_const_cgsm_thomson_cross_section

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_thomson_cross_section = 6.65245893699e-25↵_fgsl_double
```

47.1.1.102 fgsl_const_cgsm_ton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_ton = 9.0718474e5_fgsl_double
```

47.1.1.103 fgsl_const_cgsm_torr

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_torr = 1.33322368421e3_fgsl_double
```

47.1.1.104 fgsl_const_cgsm_troy_ounce

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_troy_ounce = 3.1103475e1_fgsl_↵double
```

47.1.1.105 fgsl_const_cgsm_uk_gallon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_uk_gallon = 4.546092e3_fgsl_double
```

47.1.1.106 fgsl_const_cgsm_uk_ton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_uk_ton = 1.0160469088e6_fgsl_double
```


47.1.1.107 fgsl_const_cgsm_unified_atomic_mass

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_unified_atomic_mass = 1.660538782e-24↵_fgsl_double
```

47.1.1.108 fgsl_const_cgsm_us_gallon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_us_gallon = 3.78541178402e3_fgsl_↵double
```

47.1.1.109 fgsl_const_cgsm_week

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_week = 6.048e5_fgsl_double
```

47.1.1.110 fgsl_const_cgsm_yard

```
real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_yard = 9.144e1_fgsl_double
```

47.1.1.111 fgsl_const_mksa_acre

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_acre = 4.04685642241e3_fgsl_double
```

47.1.1.112 fgsl_const_mksa_angstrom

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_angstrom = 1e-10_fgsl_double
```

47.1.1.113 fgsl_const_mksa_astronomical_unit

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_astronomical_unit = 1.49597870691e11↵_fgsl_double
```

47.1.1.114 fgsl_const_mksa_bar

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_bar = 1e5_fgsl_double
```

47.1.1.115 fgsl_const_mksa_barn

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_barn = 1e-28_fgsl_double
```

47.1.1.116 fgsl_const_mksa_bohr_magneton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_bohr_magneton = 9.27400899e-24_↵  
fgsl_double
```

47.1.1.117 fgsl_const_mksa_bohr_radius

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_bohr_radius = 5.291772083e-11_↵  
fgsl_double
```

47.1.1.118 fgsl_const_mksa_boltzmann

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_boltzmann = 1.3806504e-23_fgsl_↵  
double
```

47.1.1.119 fgsl_const_mksa_btu

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_btu = 1.05505585262e3_fgsl_double
```

47.1.1.120 fgsl_const_mksa_calorie

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_calorie = 4.1868e0_fgsl_double
```

47.1.1.121 fgsl_const_mksa_canadian_gallon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_canadian_gallon = 4.54609e-3_fgsl↵  
_double
```

47.1.1.122 fgsl_const_mksa_carat

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_carat = 2e-4_fgsl_double
```

47.1.1.123 fgsl_const_mksa_cup

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_cup = 2.36588236501e-4_fgsl_double
```

47.1.1.124 fgsl_const_mksa_curie

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_curie = 3.7e10_fgsl_double
```

47.1.1.125 fgsl_const_mksa_day

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_day = 8.64e4_fgsl_double
```

47.1.1.126 fgsl_const_mksa_debye

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_debye = 3.33564095198e-30_fgsl_↵  
double
```

47.1.1.127 fgsl_const_mksa_dyne

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_dyne = 1e-5_fgsl_double
```

47.1.1.128 fgsl_const_mksa_electron_charge

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_electron_charge = 1.602176487e-19_↵  
_fgsl_double
```

47.1.1.129 fgsl_const_mksa_electron_magnetic_moment

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_electron_magnetic_moment = 9.↵  
28476362e-24_fgsl_double
```

47.1.1.130 fgsl_const_mksa_electron_volt

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_electron_volt = 1.602176487e-19_↵  
fgsl_double
```

47.1.1.131 fgsl_const_mksa_erg

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_erg = 1e-7_fgsl_double
```

47.1.1.132 fgsl_const_mksa_faraday

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_faraday = 9.64853429775e4_fgsl_↵  
double
```

47.1.1.133 fgsl_const_mksa_fathom

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_fathom = 1.8288e0_fgsl_double
```

47.1.1.134 fgsl_const_mksa_fluid_ounce

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_fluid_ounce = 2.95735295626e-5_↵  
fgsl_double
```

47.1.1.135 fgsl_const_mksa_foot

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_foot = 3.048e-1_fgsl_double
```

47.1.1.136 fgsl_const_mksa_footcandle

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_footcandle = 1.076e1_fgsl_double
```

47.1.1.137 fgsl_const_mksa_footlambert

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_footlambert = 1.07639104e1_fgsl↔  
double
```

47.1.1.138 fgsl_const_mksa_gauss

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_gauss = 1e-4_fgsl_double
```

47.1.1.139 fgsl_const_mksa_gram_force

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_gram_force = 9.80665e-3_fgsl_double
```

47.1.1.140 fgsl_const_mksa_grav_accel

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_grav_accel = 9.80665e0_fgsl_double
```

47.1.1.141 fgsl_const_mksa_gravitational_constant

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_gravitational_constant = 6.673e-11↔  
_fgsl_double
```

47.1.1.142 fgsl_const_mksa_hectare

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_hectare = 1e4_fgsl_double
```

47.1.1.143 fgsl_const_mksa_horsepower

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_horsepower = 7.457e2_fgsl_double
```

47.1.1.144 fgsl_const_mksa_hour

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_hour = 3.6e3_fgsl_double
```

47.1.1.145 fgsl_const_mksa_inch

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_inch = 2.54e-2_fgsl_double
```

47.1.1.146 fgsl_const_mksa_inch_of_mercury

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_inch_of_mercury = 3.38638815789e3↵  
_fgsl_double
```

47.1.1.147 fgsl_const_mksa_inch_of_water

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_inch_of_water = 2.490889e2_fgsl_↵  
double
```

47.1.1.148 fgsl_const_mksa_joule

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_joule = 1e0_fgsl_double
```

47.1.1.149 fgsl_const_mksa_kilometers_per_hour

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_kilometers_per_hour = 2.77777777778e-1↵  
_fgsl_double
```

47.1.1.150 fgsl_const_mksa_kilopound_force

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_kilopound_force = 4.44822161526e3↵  
_fgsl_double
```

47.1.1.151 fgsl_const_mksa_knot

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_knot = 5.14444444444e-1_fgsl_double
```

47.1.1.152 fgsl_const_mksa_lambert

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_lambert = 1e4_fgsl_double
```

47.1.1.153 fgsl_const_mksa_light_year

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_light_year = 9.46053620707e15_↵  
fgsl_double
```

47.1.1.154 fgsl_const_mksa_liter

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_liter = 1e-3_fgsl_double
```

47.1.1.155 fgsl_const_mksa_lumen

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_lumen = 1e0_fgsl_double
```

47.1.1.156 fgsl_const_mksa_lux

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_lux = 1e0_fgsl_double
```

47.1.1.157 fgsl_const_mksa_mass_electron

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_mass_electron = 9.10938188e-31_↵  
fgsl_double
```

47.1.1.158 fgsl_const_mksa_mass_muon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_mass_muon = 1.88353109e-28_fgsl_↵  
double
```

47.1.1.159 fgsl_const_mksa_mass_neutron

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_mass_neutron = 1.67492716e-27_↵  
fgsl_double
```

47.1.1.160 fgsl_const_mksa_mass_proton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_mass_proton = 1.67262158e-27_fgsl_↵  
_double
```

47.1.1.161 fgsl_const_mksa_meter_of_mercury

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_meter_of_mercury = 1.33322368421e5_↵  
_fgsl_double
```

47.1.1.162 fgsl_const_mksa_metric_ton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_metric_ton = 1e3_fgsl_double
```


47.1.1.163 fgsl_const_mksa_micron

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_micron = 1e-6_fgsl_double
```

47.1.1.164 fgsl_const_mksa_mil

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_mil = 2.54e-5_fgsl_double
```

47.1.1.165 fgsl_const_mksa_mile

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_mile = 1.609344e3_fgsl_double
```

47.1.1.166 fgsl_const_mksa_miles_per_hour

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_miles_per_hour = 4.4704e-1_fgsl_double
```

47.1.1.167 fgsl_const_mksa_minute

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_minute = 6e1_fgsl_double
```

47.1.1.168 fgsl_const_mksa_molar_gas

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_molar_gas = 8.314472e0_fgsl_double
```

47.1.1.169 fgsl_const_mksa_nautical_mile

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_nautical_mile = 1.852e3_fgsl_double
```

47.1.1.170 fgsl_const_mksa_newton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_newton = 1e0_fgsl_double
```

47.1.1.171 fgsl_const_mksa_nuclear_magneton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_nuclear_magneton = 5.05078317e-27↵_fgsl_double
```

47.1.1.172 fgsl_const_mksa_ounce_mass

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_ounce_mass = 2.8349523125e-2_fgsl↵_double
```

47.1.1.173 fgsl_const_mksa_parsec

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_parsec = 3.08567758135e16_fgsl_↵double
```

47.1.1.174 fgsl_const_mksa_phot

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_phot = 1e4_fgsl_double
```

47.1.1.175 fgsl_const_mksa_pint

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_pint = 4.73176473002e-4_fgsl_double
```

47.1.1.176 fgsl_const_mksa_plancks_constant_h

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_plancks_constant_h = 6.62606896e-34↵_fgsl_double
```

47.1.1.177 fgsl_const_mksa_plancks_constant_hbar

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_plancks_constant_hbar = 1.05457162825e-34↵_fgsl_double
```

47.1.1.178 fgsl_const_mksa_point

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_point = 3.52777777778e-4_fgsl_↵double
```

47.1.1.179 fgsl_const_mksa_poise

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_poise = 1e-1_fgsl_double
```

47.1.1.180 fgsl_const_mksa_pound_force

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_pound_force = 4.44822161526e0_↵fgsl_double
```

47.1.1.181 fgsl_const_mksa_pound_mass

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_pound_mass = 4.5359237e-1_fgsl_↵double
```

47.1.1.182 fgsl_const_mksa_poundal

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_poundal = 1.38255e-1_fgsl_double
```

47.1.1.183 fgsl_const_mksa_proton_magnetic_moment

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_proton_magnetic_moment = 1.410606633e-26↵_fgsl_double
```

47.1.1.184 fgsl_const_mksa_psi

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_psi = 6.89475729317e3_fgsl_double
```

47.1.1.185 fgsl_const_mksa_quart

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_quart = 9.46352946004e-4_fgsl_double
```

47.1.1.186 fgsl_const_mksa_rad

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_rad = 1e-2_fgsl_double
```

47.1.1.187 fgsl_const_mksa_roentgen

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_roentgen = 2.58e-4_fgsl_double
```

47.1.1.188 fgsl_const_mksa_rydberg

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_rydberg = 2.17987196968e-18_fgsl_double
```

47.1.1.189 fgsl_const_mksa_solar_mass

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_solar_mass = 1.98892e30_fgsl_double
```

47.1.1.190 fgsl_const_mksa_speed_of_light

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_speed_of_light = 2.99792458e8_fgsl_double
```

47.1.1.191 fgsl_const_mkسا_standard_gas_volume

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mkسا_standard_gas_volume = 2.2710981e-2↵  
_fgsl_double
```

47.1.1.192 fgsl_const_mkسا_std_atmosphere

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mkسا_std_atmosphere = 1.01325e5_fgsl↵  
double
```

47.1.1.193 fgsl_const_mkسا_stefan_boltzmann_constant

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mkسا_stefan_boltzmann_constant = 5.↵  
67040047374e-8_fgsl_double
```

47.1.1.194 fgsl_const_mkساstilb

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mkساstilb = 1e4_fgsl_double
```

47.1.1.195 fgsl_const_mkساstokes

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mkساstokes = 1e-4_fgsl_double
```

47.1.1.196 fgsl_const_mkسا_tablespoon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mkسا_tablespoon = 1.47867647813e-5↵  
fgsl_double
```

47.1.1.197 fgsl_const_mkسا_tea Spoon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mkسا_tea Spoon = 4.92892159375e-6_fgsl↵  
double
```

47.1.1.198 fgsl_const_mksa_texpoint

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_texpoint = 3.51459803515e-4_fgsl_double↵
```

47.1.1.199 fgsl_const_mksa_therm

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_therm = 1.05506e8_fgsl_double
```

47.1.1.200 fgsl_const_mksa_thomson_cross_section

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_thomson_cross_section = 6.65245893699e-29↵_fgsl_double
```

47.1.1.201 fgsl_const_mksa_ton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_ton = 9.0718474e2_fgsl_double
```

47.1.1.202 fgsl_const_mksa_torr

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_torr = 1.33322368421e2_fgsl_double
```

47.1.1.203 fgsl_const_mksa_troy_ounce

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_troy_ounce = 3.1103475e-2_fgsl_double↵
```

47.1.1.204 fgsl_const_mksa_uk_gallon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_uk_gallon = 4.546092e-3_fgsl_double
```

47.1.1.205 fgsl_const_mksa_uk_ton

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_uk_ton = 1.0160469088e3_fgsl_double
```

47.1.1.206 fgsl_const_mksa_unified_atomic_mass

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_unified_atomic_mass = 1.660538782e-27↔  
_fgsl_double
```

47.1.1.207 fgsl_const_mksa_us_gallon

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_us_gallon = 3.78541178402e-3_fgsl↔  
_double
```

47.1.1.208 fgsl_const_mksa_vacuum_permeability

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_vacuum_permeability = 1.25663706144e-6↔  
_fgsl_double
```

47.1.1.209 fgsl_const_mksa_vacuum_permittivity

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_vacuum_permittivity = 8.854187817e-12↔  
_fgsl_double
```

47.1.1.210 fgsl_const_mksa_week

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_week = 6.048e5_fgsl_double
```

47.1.1.211 fgsl_const_mksa_yard

```
real(fgsl_double), parameter, public fgsl::fgsl_const_mksa_yard = 9.144e-1_fgsl_double
```

47.1.1.212 fgsl_const_num_atto

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_atto = 1e-18_fgsl_double
```

47.1.1.213 fgsl_const_num_avogadro

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_avogadro = 6.02214199E23_fgsl_double
```

47.1.1.214 fgsl_const_num_exa

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_exa = 1e18_fgsl_double
```

47.1.1.215 fgsl_const_num_femto

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_femto = 1e-15_fgsl_double
```

47.1.1.216 fgsl_const_num_fine_structure

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_fine_structure = 7.297352533E-3_↵  
fgsl_double
```

47.1.1.217 fgsl_const_num_giga

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_giga = 1e9_fgsl_double
```

47.1.1.218 fgsl_const_num_kilo

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_kilo = 1e3_fgsl_double
```


47.1.1.219 fgsl_const_num_mega

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_mega = 1e6_fgsl_double
```

47.1.1.220 fgsl_const_num_micro

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_micro = 1e-6_fgsl_double
```

47.1.1.221 fgsl_const_num_milli

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_milli = 1e-3_fgsl_double
```

47.1.1.222 fgsl_const_num_nano

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_nano = 1e-9_fgsl_double
```

47.1.1.223 fgsl_const_num_peta

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_peta = 1e15_fgsl_double
```

47.1.1.224 fgsl_const_num_pico

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_pico = 1e-12_fgsl_double
```

47.1.1.225 fgsl_const_num_tera

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_tera = 1e12_fgsl_double
```

47.1.1.226 fgsl_const_num_yocto

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_yocto = 1e-24_fgsl_double
```

47.1.1.227 fgsl_const_num_yotta

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_yotta = 1e24_fgsl_double
```

47.1.1.228 fgsl_const_numzepto

```
real(fgsl_double), parameter, public fgsl::fgsl_const_numzepto = 1e-21_fgsl_double
```

47.1.1.229 fgsl_const_num_zetta

```
real(fgsl_double), parameter, public fgsl::fgsl_const_num_zetta = 1e21_fgsl_double
```

47.1.1.230 fgsl_continue

```
integer(fgsl_int), parameter, public fgsl::fgsl_continue = -2
```

47.1.1.231 fgsl_double

```
integer, parameter, public fgsl::fgsl_double = c_double
```

47.1.1.232 fgsl_double_complex

```
integer, parameter, public fgsl::fgsl_double_complex = c_double_complex
```

47.1.1.233 fgsl_ebadfunc

```
integer(fgsl_int), parameter, public fgsl::fgsl_ebadfunc = 9
```

47.1.1.234 fgsl_ebadlen

```
integer(fgsl_int), parameter, public fgsl::fgsl_ebadlen = 19
```

47.1.1.235 fgsl_ebadtol

```
integer(fgsl_int), parameter, public fgsl::fgsl_ebadtol = 13
```

47.1.1.236 fgsl_ecache

```
integer(fgsl_int), parameter, public fgsl::fgsl_ecache = 25
```

47.1.1.237 fgsl_ediverge

```
integer(fgsl_int), parameter, public fgsl::fgsl_ediverge = 22
```

47.1.1.238 fgsl_edom

```
integer(fgsl_int), parameter, public fgsl::fgsl_edom = 1
```

47.1.1.239 fgsl_efactor

```
integer(fgsl_int), parameter, public fgsl::fgsl_efactor = 6
```

47.1.1.240 fgsl_efault

```
integer(fgsl_int), parameter, public fgsl::fgsl_efault = 3
```

47.1.1.241 fgsl_eigen_sort_abs_asc

```
integer(c_int), parameter, public fgsl::fgsl_eigen_sort_abs_asc = 2
```

47.1.1.242 fgsl_eigen_sort_abs_desc

```
integer(c_int), parameter, public fgsl::fgsl_eigen_sort_abs_desc = 3
```

47.1.1.243 fgsl_eigen_sort_val_asc

```
integer(c_int), parameter, public fgsl::fgsl_eigen_sort_val_asc = 0
```

47.1.1.244 fgsl_eigen_sort_val_desc

```
integer(c_int), parameter, public fgsl::fgsl_eigen_sort_val_desc = 1
```

47.1.1.245 fgsl_einval

```
integer(fgsl_int), parameter, public fgsl::fgsl_einval = 4
```

47.1.1.246 fgsl_eloss

```
integer(fgsl_int), parameter, public fgsl::fgsl_eloss = 17
```

47.1.1.247 fgsl_emaxiter

```
integer(fgsl_int), parameter, public fgsl::fgsl_emaxiter = 11
```

47.1.1.248 fgsl_enomem

```
integer(fgsl_int), parameter, public fgsl::fgsl_enomem = 8
```

47.1.1.249 fgsl_enoprog

```
integer(fgsl_int), parameter, public fgsl::fgsl_enoprog = 27
```

47.1.1.250 fgsl_enoproj

```
integer(fgsl_int), parameter, public fgsl::fgsl_enoproj = 28
```

47.1.1.251 fgsl_enotsqr

```
integer(fgsl_int), parameter, public fgsl::fgsl_enotsqr = 20
```

47.1.1.252 fgsl_eof

```
integer(fgsl_int), parameter, public fgsl::fgsl_eof = 32
```

47.1.1.253 fgsl_eovrflw

```
integer(fgsl_int), parameter, public fgsl::fgsl_eovrflw = 16
```

47.1.1.254 fgsl_erange

```
integer(fgsl_int), parameter, public fgsl::fgsl_erange = 2
```

47.1.1.255 fgsl_eround

```
integer(fgsl_int), parameter, public fgsl::fgsl_eround = 18
```

47.1.1.256 fgsl_erunaway

```
integer(fgsl_int), parameter, public fgsl::fgsl_erunaway = 10
```

47.1.1.257 fgsl_esanity

```
integer(fgsl_int), parameter, public fgsl::fgsl_esanity = 7
```

47.1.1.258 fgsl_esing

```
integer(fgsl_int), parameter, public fgsl::fgsl_esing = 21
```

47.1.1.259 fgsl_etable

```
integer(fgsl_int), parameter, public fgsl::fgsl_etable = 26
```

47.1.1.260 fgsl_etol

```
integer(fgsl_int), parameter, public fgsl::fgsl_etol = 14
```

47.1.1.261 fgsl_etolf

```
integer(fgsl_int), parameter, public fgsl::fgsl_etolf = 29
```

47.1.1.262 fgsl_etolg

```
integer(fgsl_int), parameter, public fgsl::fgsl_etolg = 31
```

47.1.1.263 fgsl_etolx

```
integer(fgsl_int), parameter, public fgsl::fgsl_etolx = 30
```

47.1.1.264 fgsl_eundrflw

```
integer(fgsl_int), parameter, public fgsl::fgsl_eundrflw = 15
```

47.1.1.265 fgsl_eunimpl

```
integer(fgsl_int), parameter, public fgsl::fgsl_eunimpl = 24
```

47.1.1.266 fgsl_eunsup

```
integer(fgsl_int), parameter, public fgsl::fgsl_eunsup = 23
```

47.1.1.267 fgsl_extended

```
integer, parameter, public fgsl::fgsl_extended = selected_real_kind(13)
```

47.1.1.268 fgsl_ezerodiv

```
integer(fgsl_int), parameter, public fgsl::fgsl_ezerodiv = 12
```

47.1.1.269 fgsl_failure

```
integer(fgsl_int), parameter, public fgsl::fgsl_failure = -1
```

47.1.1.270 fgsl_filter_end_padvalue

```
integer(fgsl_int), parameter, public fgsl::fgsl_filter_end_padvalue = 1
```

47.1.1.271 fgsl_filter_end_padzero

```
integer(fgsl_int), parameter, public fgsl::fgsl_filter_end_padzero = 0
```

Note: `gsl_movstat_accum` is not matched since the publicized interface does not make explicit use of accumulators.

47.1.1.272 fgsl_filter_end_truncate

```
integer(fgsl_int), parameter, public fgsl::fgsl_filter_end_truncate = 2
```

47.1.1.273 fgsl_filter_scale_iqr

```
integer(fgsl_int), parameter, public fgsl::fgsl_filter_scale_iqr = 1
```

47.1.1.274 fgsl_filter_scale_mad

```
integer(fgsl_int), parameter, public fgsl::fgsl_filter_scale_mad = 0
```

47.1.1.275 fgsl_filter_scale_qn

```
integer(fgsl_int), parameter, public fgsl::fgsl_filter_scale_qn = 3
```

47.1.1.276 fgsl_filter_scale_sn

```
integer(fgsl_int), parameter, public fgsl::fgsl_filter_scale_sn = 2
```

47.1.1.277 fgsl_float

```
integer, parameter, public fgsl::fgsl_float = c_float
```

47.1.1.278 fgsl_gslbase

```
character(kind=fgsl_char, len=*), parameter, public fgsl::fgsl_gslbase =GSL_VERSION
```

47.1.1.279 fgsl_int

```
integer, parameter, public fgsl::fgsl_int = c_int
```

47.1.1.280 fgsl_integ_cosine

```
integer(fgsl_int), parameter, public fgsl::fgsl_integ_cosine = 0
```

47.1.1.281 fgsl_integ_gauss15

```
integer(fgsl_int), parameter, public fgsl::fgsl_integ_gauss15 = 1
```


47.1.1.282 fgsl_integ_gauss21

```
integer(fgsl_int), parameter, public fgsl::fgsl_integ_gauss21 = 2
```

47.1.1.283 fgsl_integ_gauss31

```
integer(fgsl_int), parameter, public fgsl::fgsl_integ_gauss31 = 3
```

47.1.1.284 fgsl_integ_gauss41

```
integer(fgsl_int), parameter, public fgsl::fgsl_integ_gauss41 = 4
```

47.1.1.285 fgsl_integ_gauss51

```
integer(fgsl_int), parameter, public fgsl::fgsl_integ_gauss51 = 5
```

47.1.1.286 fgsl_integ_gauss61

```
integer(fgsl_int), parameter, public fgsl::fgsl_integ_gauss61 = 6
```

47.1.1.287 fgsl_integ_sine

```
integer(fgsl_int), parameter, public fgsl::fgsl_integ_sine = 1
```

47.1.1.288 fgsl_integration_fixed_chebyshev

```
integer(fgsl_int), parameter, public fgsl::fgsl_integration_fixed_chebyshev = 2
```

47.1.1.289 fgsl_integration_fixed_chebyshev2

```
integer(fgsl_int), parameter, public fgsl::fgsl_integration_fixed_chebyshev2 = 9
```

47.1.1.290 fgsl_integration_fixed_exponential

```
integer(fgsl_int), parameter, public fgsl::fgsl_integration_fixed_exponential = 7
```

47.1.1.291 fgsl_integration_fixed_gegenbauer

```
integer(fgsl_int), parameter, public fgsl::fgsl_integration_fixed_gegenbauer = 3
```

47.1.1.292 fgsl_integration_fixed_hermite

```
integer(fgsl_int), parameter, public fgsl::fgsl_integration_fixed_hermite = 6
```

47.1.1.293 fgsl_integration_fixed_jacobi

```
integer(fgsl_int), parameter, public fgsl::fgsl_integration_fixed_jacobi = 4
```

47.1.1.294 fgsl_integration_fixed_laguerre

```
integer(fgsl_int), parameter, public fgsl::fgsl_integration_fixed_laguerre = 5
```

47.1.1.295 fgsl_integration_fixed_legendre

```
integer(fgsl_int), parameter, public fgsl::fgsl_integration_fixed_legendre = 1
```

47.1.1.296 fgsl_integration_fixed_rational

```
integer(fgsl_int), parameter, public fgsl::fgsl_integration_fixed_rational = 8
```

47.1.1.297 fgsl_interp2d_bicubic

```
type(fgsl_interp2d_type), parameter, public fgsl::fgsl_interp2d_bicubic = fgsl_interp2d_type(2)
```

47.1.1.298 fgsl_interp2d_bilinear

```
type(fgsl_interp2d_type), parameter, public fgsl::fgsl_interp2d_bilinear = fgsl_interp2d_type(1)
```

47.1.1.299 fgsl_interp_akima

```
type(fgsl_interp_type), parameter, public fgsl::fgsl_interp_akima = fgsl_interp_type(5)
```

47.1.1.300 fgsl_interp_akima_periodic

```
type(fgsl_interp_type), parameter, public fgsl::fgsl_interp_akima_periodic = fgsl_interp_type(6)
```

47.1.1.301 fgsl_interp_cspline

```
type(fgsl_interp_type), parameter, public fgsl::fgsl_interp_cspline = fgsl_interp_type(3)
```

47.1.1.302 fgsl_interp_cspline_periodic

```
type(fgsl_interp_type), parameter, public fgsl::fgsl_interp_cspline_periodic = fgsl_interp_type(4)
```

47.1.1.303 fgsl_interp_linear

```
type(fgsl_interp_type), parameter, public fgsl::fgsl_interp_linear = fgsl_interp_type(1)
```

47.1.1.304 fgsl_interp_polynomial

```
type(fgsl_interp_type), parameter, public fgsl::fgsl_interp_polynomial = fgsl_interp_type(2)
```

47.1.1.305 fgsl_interp_steffen

```
type(fgsl_interp_type), parameter, public fgsl::fgsl_interp_steffen = fgsl_interp_type(7)
```

47.1.1.306 fgsl_long

```
integer, parameter, public fgsl::fgsl_long = c_long
```

47.1.1.307 fgsl_min_fminimizer_brent

```
type(fgsl_min_fminimizer_type), parameter, public fgsl::fgsl_min_fminimizer_brent = fgsl_min_fminimizer_type(2)
```

47.1.1.308 fgsl_min_fminimizer_goldensection

```
type(fgsl_min_fminimizer_type), parameter, public fgsl::fgsl_min_fminimizer_goldensection =  
fgsl_min_fminimizer_type(1)
```

47.1.1.309 fgsl_min_fminimizer_quad_golden

```
type(fgsl_min_fminimizer_type), parameter, public fgsl::fgsl_min_fminimizer_quad_golden =  
fgsl_min_fminimizer_type(3)
```

47.1.1.310 fgsl_movstat_end_padvalue

```
integer(fgsl_int), parameter, public fgsl::fgsl_movstat_end_padvalue = 1
```

47.1.1.311 fgsl_movstat_end_padzero

```
integer(fgsl_int), parameter, public fgsl::fgsl_movstat_end_padzero = 0
```

47.1.1.312 fgsl_movstat_end_truncate

```
integer(fgsl_int), parameter, public fgsl::fgsl_movstat_end_truncate = 2
```

47.1.1.313 fgsl_multifit_fdfsolver_lmder

```
type(fgsl_multifit_fdfsolver_type), parameter, public fgsl::fgsl_multifit_fdfsolver_lmder =  
fgsl_multifit_fdfsolver_type(1)
```

47.1.1.314 fgsl_multifit_fdfsolver_lmniel

```
type(fgsl_multifit_fdfsolver_type), parameter, public fgsl::fgsl_multifit_fdfsolver_lmniel =  
fgsl_multifit_fdfsolver_type(3)
```

47.1.1.315 fgsl_multifit_fdfsolver_lmsder

```
type(fgsl_multifit_fdfsolver_type), parameter, public fgsl::fgsl_multifit_fdfsolver_lmsder =  
fgsl_multifit_fdfsolver_type(2)
```

47.1.1.316 fgsl_multifit_nlinear_ctrdiff

```
integer(fgsl_int), parameter, public fgsl::fgsl_multifit_nlinear_ctrdiff = 1
```

47.1.1.317 fgsl_multifit_nlinear_fwdiff

```
integer(fgsl_int), parameter, public fgsl::fgsl_multifit_nlinear_fwdiff = 0
```

47.1.1.318 fgsl_multifit_nlinear_scale_levenberg

```
type(fgsl_multifit_nlinear_scale), parameter, public fgsl::fgsl_multifit_nlinear_scale_↔  
levenberg = fgsl_multifit_nlinear_scale(1)
```

47.1.1.319 fgsl_multifit_nlinear_scale_marquardt

```
type(fgsl_multifit_nlinear_scale), parameter, public fgsl::fgsl_multifit_nlinear_scale_↔  
marquardt = fgsl_multifit_nlinear_scale(2)
```

47.1.1.320 fgsl_multifit_nlinear_scale_more

```
type(fgsl_multifit_nlinear_scale), parameter, public fgsl::fgsl_multifit_nlinear_scale_more =  
fgsl_multifit_nlinear_scale(3)
```

47.1.1.321 fgsl_multifit_nlinear_solver_cholesky

```
type(fgsl_multifit_nlinear_solver), parameter, public fgsl::fgsl_multifit_nlinear_solver_↵  
cholesky = fgsl_multifit_nlinear_solver(1)
```

47.1.1.322 fgsl_multifit_nlinear_solver_qr

```
type(fgsl_multifit_nlinear_solver), parameter, public fgsl::fgsl_multifit_nlinear_solver_qr =  
fgsl_multifit_nlinear_solver(2)
```

47.1.1.323 fgsl_multifit_nlinear_solver_svd

```
type(fgsl_multifit_nlinear_solver), parameter, public fgsl::fgsl_multifit_nlinear_solver_svd =  
fgsl_multifit_nlinear_solver(3)
```

47.1.1.324 fgsl_multifit_nlinear_trs_ddogleg

```
type(fgsl_multifit_nlinear_trs), parameter, public fgsl::fgsl_multifit_nlinear_trs_ddogleg =  
fgsl_multifit_nlinear_trs(4)
```

47.1.1.325 fgsl_multifit_nlinear_trs_dogleg

```
type(fgsl_multifit_nlinear_trs), parameter, public fgsl::fgsl_multifit_nlinear_trs_dogleg =  
fgsl_multifit_nlinear_trs(3)
```

47.1.1.326 fgsl_multifit_nlinear_trs_lm

```
type(fgsl_multifit_nlinear_trs), parameter, public fgsl::fgsl_multifit_nlinear_trs_lm = fgsl↵  
_multifit_nlinear_trs(1)
```

47.1.1.327 fgsl_multifit_nlinear_trs_lmaccel

```
type(fgsl_multifit_nlinear_trs), parameter, public fgsl::fgsl_multifit_nlinear_trs_lmaccel =  
fgsl_multifit_nlinear_trs(2)
```

47.1.1.328 fgsl_multifit_nlinear_trs_subspace2d

```
type(fgsl_multifit_nlinear_trs), parameter, public fgsl::fgsl_multifit_nlinear_trs_subspace2d  
= fgsl_multifit_nlinear_trs(5)
```

47.1.1.329 fgsl_multifit_robust_bisquare

```
type(fgsl_multifit_robust_type), parameter, public fgsl::fgsl_multifit_robust_bisquare = fgsl_multifit_robust_type
```

47.1.1.330 fgsl_multifit_robust_cauchy

```
type(fgsl_multifit_robust_type), parameter, public fgsl::fgsl_multifit_robust_cauchy = fgsl_multifit_robust_type
```

47.1.1.331 fgsl_multifit_robust_default

```
type(fgsl_multifit_robust_type), parameter, public fgsl::fgsl_multifit_robust_default = fgsl_multifit_robust_type
```

47.1.1.332 fgsl_multifit_robust_fair

```
type(fgsl_multifit_robust_type), parameter, public fgsl::fgsl_multifit_robust_fair = fgsl_multifit_robust_type
```

47.1.1.333 fgsl_multifit_robust_huber

```
type(fgsl_multifit_robust_type), parameter, public fgsl::fgsl_multifit_robust_huber = fgsl_multifit_robust_type
```

47.1.1.334 fgsl_multifit_robust_ols

```
type(fgsl_multifit_robust_type), parameter, public fgsl::fgsl_multifit_robust_ols = fgsl_multifit_robust_type
```

47.1.1.335 fgsl_multifit_robust_welsch

```
type(fgsl_multifit_robust_type), parameter, public fgsl::fgsl_multifit_robust_welsch = fgsl_multifit_robust_ty
```

47.1.1.336 fgsl_multilarge_linear_normal

```
type(fgsl_multilarge_linear_type), parameter, public fgsl::fgsl_multilarge_linear_normal =  
fgsl_multilarge_linear_type(1)
```

47.1.1.337 fgsl_multilarge_linear_tsqr

```
type(fgsl_multilarge_linear_type), parameter, public fgsl::fgsl_multilarge_linear_tsqr = fgsl_multilarge_linea
```

47.1.1.338 fgsl_multilarge_nlinear_scale levenberg

```
type(fgsl_multilarge_nlinear_scale), parameter, public fgsl::fgsl_multilarge_nlinear_scale↔  
levenberg = fgsl_multilarge_nlinear_scale(1)
```

47.1.1.339 fgsl_multilarge_nlinear_scale_marquardt

```
type(fgsl_multilarge_nlinear_scale), parameter, public fgsl::fgsl_multilarge_nlinear_scale↔  
marquardt = fgsl_multilarge_nlinear_scale(2)
```

47.1.1.340 fgsl_multilarge_nlinear_scale_more

```
type(fgsl_multilarge_nlinear_scale), parameter, public fgsl::fgsl_multilarge_nlinear_scale↔  
more = fgsl_multilarge_nlinear_scale(3)
```


47.1.1.341 fgsl_multilarge_nlinear_solver_cholesky

```
type(fgsl_multilarge_nlinear_solver), parameter, public fgsl::fgsl_multilarge_nlinear_solver←  
_cholesky = fgsl_multilarge_nlinear_solver(1)
```

47.1.1.342 fgsl_multilarge_nlinear_trs_cgst

```
type(fgsl_multilarge_nlinear_trs), parameter, public fgsl::fgsl_multilarge_nlinear_trs_cgst =  
fgsl_multilarge_nlinear_trs(6)
```

47.1.1.343 fgsl_multilarge_nlinear_trs_ddogleg

```
type(fgsl_multilarge_nlinear_trs), parameter, public fgsl::fgsl_multilarge_nlinear_trs_ddogleg  
= fgsl_multilarge_nlinear_trs(4)
```

47.1.1.344 fgsl_multilarge_nlinear_trs_dogleg

```
type(fgsl_multilarge_nlinear_trs), parameter, public fgsl::fgsl_multilarge_nlinear_trs_dogleg  
= fgsl_multilarge_nlinear_trs(3)
```

47.1.1.345 fgsl_multilarge_nlinear_trs_lm

```
type(fgsl_multilarge_nlinear_trs), parameter, public fgsl::fgsl_multilarge_nlinear_trs_lm =  
fgsl_multilarge_nlinear_trs(1)
```

47.1.1.346 fgsl_multilarge_nlinear_trs_lmaccel

```
type(fgsl_multilarge_nlinear_trs), parameter, public fgsl::fgsl_multilarge_nlinear_trs_lmaccel  
= fgsl_multilarge_nlinear_trs(2)
```

47.1.1.347 fgsl_multilarge_nlinear_trs_subspace2d

```
type(fgsl_multilarge_nlinear_trs), parameter, public fgsl::fgsl_multilarge_nlinear_trs←  
subspace2d = fgsl_multilarge_nlinear_trs(5)
```

47.1.1.348 fgsl_multimin_fdfminimizer_conjugate_fr

```
type(fgsl_multimin_fdfminimizer_type), parameter, public fgsl::fgsl_multimin_fdfminimizer_↵  
conjugate_fr = fgsl_multimin_fdfminimizer_type(3)
```

47.1.1.349 fgsl_multimin_fdfminimizer_conjugate_pr

```
type(fgsl_multimin_fdfminimizer_type), parameter, public fgsl::fgsl_multimin_fdfminimizer_↵  
conjugate_pr = fgsl_multimin_fdfminimizer_type(2)
```

47.1.1.350 fgsl_multimin_fdfminimizer_steepest_descent

```
type(fgsl_multimin_fdfminimizer_type), parameter, public fgsl::fgsl_multimin_fdfminimizer_↵  
steepest_descent = fgsl_multimin_fdfminimizer_type(1)
```

47.1.1.351 fgsl_multimin_fdfminimizer_vector_bfgs

```
type(fgsl_multimin_fdfminimizer_type), parameter, public fgsl::fgsl_multimin_fdfminimizer_↵  
vector_bfgs = fgsl_multimin_fdfminimizer_type(4)
```

47.1.1.352 fgsl_multimin_fdfminimizer_vector_bfgs2

```
type(fgsl_multimin_fdfminimizer_type), parameter, public fgsl::fgsl_multimin_fdfminimizer_↵  
vector_bfgs2 = fgsl_multimin_fdfminimizer_type(5)
```

47.1.1.353 fgsl_multimin_fminimizer_nmsimplex

```
type(fgsl_multimin_fminimizer_type), parameter, public fgsl::fgsl_multimin_fminimizer_nmsimplex  
= fgsl_multimin_fminimizer_type(1)
```

47.1.1.354 fgsl_multimin_fminimizer_nmsimplex2

```
type(fgsl_multimin_fminimizer_type), parameter, public fgsl::fgsl_multimin_fminimizer_nmsimplex2  
= fgsl_multimin_fminimizer_type(2)
```

47.1.1.355 fgsl_multimin_fminimizer_nmsimplex2rand

```
type(fgsl_multimin_fminimizer_type), parameter, public fgsl::fgsl_multimin_fminimizer_nmsimplex2rand  
= fgsl_multimin_fminimizer_type(3)
```

47.1.1.356 fgsl_multiroot_fdfsolver_gnewton

```
type(fgsl_multiroot_fdfsolver_type), parameter, public fgsl::fgsl_multiroot_fdfsolver_gnewton  
= fgsl_multiroot_fdfsolver_type(2)
```

47.1.1.357 fgsl_multiroot_fdfsolver_hybridj

```
type(fgsl_multiroot_fdfsolver_type), parameter, public fgsl::fgsl_multiroot_fdfsolver_hybridj  
= fgsl_multiroot_fdfsolver_type(3)
```

47.1.1.358 fgsl_multiroot_fdfsolver_hybridsj

```
type(fgsl_multiroot_fdfsolver_type), parameter, public fgsl::fgsl_multiroot_fdfsolver_hybridsj  
= fgsl_multiroot_fdfsolver_type(4)
```

47.1.1.359 fgsl_multiroot_fdfsolver_newton

```
type(fgsl_multiroot_fdfsolver_type), parameter, public fgsl::fgsl_multiroot_fdfsolver_newton =  
fgsl_multiroot_fdfsolver_type(1)
```

47.1.1.360 fgsl_multiroot_fsolver_broyden

```
type(fgsl_multiroot_fsolver_type), parameter, public fgsl::fgsl_multiroot_fsolver_broyden =  
fgsl_multiroot_fsolver_type(2)
```

47.1.1.361 fgsl_multiroot_fsolver_dnewton

```
type(fgsl_multiroot_fsolver_type), parameter, public fgsl::fgsl_multiroot_fsolver_dnewton =  
fgsl_multiroot_fsolver_type(1)
```

47.1.1.362 fgsl_multiroot_fsolver_hybrid

```
type(fgsl_multiroot_fsolver_type), parameter, public fgsl::fgsl_multiroot_fsolver_hybrid =  
fgsl_multiroot_fsolver_type(3)
```

47.1.1.363 fgsl_multiroot_fsolver_hybrids

```
type(fgsl_multiroot_fsolver_type), parameter, public fgsl::fgsl_multiroot_fsolver_hybrids =  
fgsl_multiroot_fsolver_type(4)
```

47.1.1.364 fgsl_odeiv2_step_bsimp

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_bsimp = fgsl_odeiv2_step_type(9)
```

47.1.1.365 fgsl_odeiv2_step_msadams

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_msadams = fgsl_odeiv2_step_type(10)
```

47.1.1.366 fgsl_odeiv2_step_msbdf

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_msbdf = fgsl_odeiv2_step_type(11)
```

47.1.1.367 fgsl_odeiv2_step_rk1imp

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_rk1imp = fgsl_odeiv2_step_type(6)
```

47.1.1.368 fgsl_odeiv2_step_rk2

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_rk2 = fgsl_odeiv2_step_type(1)
```

47.1.1.369 fgsl_odeiv2_step_rk2imp

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_rk2imp = fgsl_odeiv2_step_type(7)
```

47.1.1.370 fgsl_odeiv2_step_rk4

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_rk4 = fgsl_odeiv2_step_type(2)
```

47.1.1.371 fgsl_odeiv2_step_rk4imp

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_rk4imp = fgsl_odeiv2_step_type(8)
```

47.1.1.372 fgsl_odeiv2_step_rk8pd

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_rk8pd = fgsl_odeiv2_step_type(5)
```

47.1.1.373 fgsl_odeiv2_step_rkck

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_rkck = fgsl_odeiv2_step_type(4)
```

47.1.1.374 fgsl_odeiv2_step_rkf45

```
type(fgsl_odeiv2_step_type), parameter, public fgsl::fgsl_odeiv2_step_rkf45 = fgsl_odeiv2_step_type(3)
```

47.1.1.375 fgsl_odeiv_hadj_dec

```
integer(fgsl_int), parameter, public fgsl::fgsl_odeiv_hadj_dec = -1
```

47.1.1.376 fgsl_odeiv_hadj_inc

```
integer(fgsl_int), parameter, public fgsl::fgsl_odeiv_hadj_inc = 1
```

47.1.1.377 fgsl_odeiv_hadj_nil

```
integer(fgsl_int), parameter, public fgsl::fgsl_odeiv_hadj_nil = 0
```

47.1.1.378 fgsl_odeiv_step_bsimp

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_bsimp = fgsl_odeiv_step_type(9)
```

47.1.1.379 fgsl_odeiv_step_gear1

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_gear1 = fgsl_odeiv_step_type(10)
```

47.1.1.380 fgsl_odeiv_step_gear2

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_gear2 = fgsl_odeiv_step_type(11)
```

47.1.1.381 fgsl_odeiv_step_rk2

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_rk2 = fgsl_odeiv_step_type(1)
```

47.1.1.382 fgsl_odeiv_step_rk2imp

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_rk2imp = fgsl_odeiv_step_type(6)
```

47.1.1.383 fgsl_odeiv_step_rk2simp

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_rk2simp = fgsl_odeiv_step_type(7)
```

47.1.1.384 fgsl_odeiv_step_rk4

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_rk4 = fgsl_odeiv_step_type(2)
```

47.1.1.385 fgsl_odeiv_step_rk4imp

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_rk4imp = fgsl_odeiv_step_type(8)
```

47.1.1.386 fgsl_odeiv_step_rk8pd

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_rk8pd = fgsl_odeiv_step_type(5)
```

47.1.1.387 fgsl_odeiv_step_rkck

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_rkck = fgsl_odeiv_step_type(4)
```

47.1.1.388 fgsl_odeiv_step_rkf45

```
type(fgsl_odeiv_step_type), parameter, public fgsl::fgsl_odeiv_step_rkf45 = fgsl_odeiv_step_type(3)
```

47.1.1.389 fgsl_pathmax

```
integer, parameter, public fgsl::fgsl_pathmax = 2048
```

47.1.1.390 fgsl_prec_approx

```
type(fgsl_mode_t), parameter, public fgsl::fgsl_prec_approx = fgsl_mode_t(2)
```

47.1.1.391 fgsl_prec_double

```
type(fgsl_mode_t), parameter, public fgsl::fgsl_prec_double = fgsl_mode_t(0)
```

47.1.1.392 fgsl_prec_single

```
type(fgsl_mode_t), parameter, public fgsl::fgsl_prec_single = fgsl_mode_t(1)
```

47.1.1.393 fgsl_qrng_halt

```
type(fgsl_qrng_type), parameter, public fgsl::fgsl_qrng_halt = fgsl_qrng_type(3)
```

47.1.1.394 fgsl_qrng_niederreiter_2

```
type(fgsl_qrng_type), parameter, public fgsl::fgsl_qrng_niederreiter_2 = fgsl_qrng_type(1)
```

47.1.1.395 fgsl_qrng_reversehalt

```
type(fgsl_qrng_type), parameter, public fgsl::fgsl_qrng_reversehalt = fgsl_qrng_type(4)
```

47.1.1.396 fgsl_qrng_sobol

```
type(fgsl_qrng_type), parameter, public fgsl::fgsl_qrng_sobol = fgsl_qrng_type(2)
```

47.1.1.397 fgsl_rng_borosh13

```
type(fgsl_rng_type), public fgsl::fgsl_rng_borosh13 = fgsl_rng_type(c_null_ptr, 1)
```

47.1.1.398 fgsl_rng_cmrg

```
type(fgsl_rng_type), public fgsl::fgsl_rng_cmrg = fgsl_rng_type(c_null_ptr, 3)
```

47.1.1.399 fgsl_rng_coveyou

```
type(fgsl_rng_type), public fgsl::fgsl_rng_coveyou = fgsl_rng_type(c_null_ptr, 2)
```

47.1.1.400 fgsl_rng_default

```
type(fgsl_rng_type), public fgsl::fgsl_rng_default = fgsl_rng_type(c_null_ptr, -1)
```


47.1.1.401 fgsl_rng_default_seed

```
integer(fgsl_long), bind(C, name='gsl_rng_default_seed'), public fgsl::fgsl_rng_default_seed
```

47.1.1.402 fgsl_rng_fishman18

```
type(fgsl_rng_type), public fgsl::fgsl_rng_fishman18 = fgsl_rng_type(c_null_ptr, 4)
```

47.1.1.403 fgsl_rng_fishman20

```
type(fgsl_rng_type), public fgsl::fgsl_rng_fishman20 = fgsl_rng_type(c_null_ptr, 5)
```

47.1.1.404 fgsl_rng_fishman2x

```
type(fgsl_rng_type), public fgsl::fgsl_rng_fishman2x = fgsl_rng_type(c_null_ptr, 6)
```

47.1.1.405 fgsl_rng_gfsr4

```
type(fgsl_rng_type), public fgsl::fgsl_rng_gfsr4 = fgsl_rng_type(c_null_ptr, 7)
```

47.1.1.406 fgsl_rng_knuthran

```
type(fgsl_rng_type), public fgsl::fgsl_rng_knuthran = fgsl_rng_type(c_null_ptr, 8)
```

47.1.1.407 fgsl_rng_knuthran2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_knuthran2 = fgsl_rng_type(c_null_ptr, 9)
```

47.1.1.408 fgsl_rng_knuthran2002

```
type(fgsl_rng_type), public fgsl::fgsl_rng_knuthran2002 = fgsl_rng_type(c_null_ptr, 62)
```

47.1.1.409 fgsl_rng_lecuyer21

```
type(fgsl_rng_type), public fgsl::fgsl_rng_lecuyer21 = fgsl_rng_type(c_null_ptr, 10)
```

47.1.1.410 fgsl_rng_minstd

```
type(fgsl_rng_type), public fgsl::fgsl_rng_minstd = fgsl_rng_type(c_null_ptr, 11)
```

47.1.1.411 fgsl_rng_mrg

```
type(fgsl_rng_type), public fgsl::fgsl_rng_mrg = fgsl_rng_type(c_null_ptr, 12)
```

47.1.1.412 fgsl_rng_mt19937

```
type(fgsl_rng_type), public fgsl::fgsl_rng_mt19937 = fgsl_rng_type(c_null_ptr, 13)
```

47.1.1.413 fgsl_rng_mt19937_1998

```
type(fgsl_rng_type), public fgsl::fgsl_rng_mt19937_1998 = fgsl_rng_type(c_null_ptr, 15)
```

47.1.1.414 fgsl_rng_mt19937_1999

```
type(fgsl_rng_type), public fgsl::fgsl_rng_mt19937_1999 = fgsl_rng_type(c_null_ptr, 14)
```

47.1.1.415 fgsl_rng_r250

```
type(fgsl_rng_type), public fgsl::fgsl_rng_r250 = fgsl_rng_type(c_null_ptr, 16)
```

47.1.1.416 fgsl_rng_ran0

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ran0 = fgsl_rng_type(c_null_ptr, 17)
```

47.1.1.417 fgsl_rng_ran1

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ran1 = fgsl_rng_type(c_null_ptr, 18)
```

47.1.1.418 fgsl_rng_ran2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ran2 = fgsl_rng_type(c_null_ptr, 19)
```

47.1.1.419 fgsl_rng_ran3

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ran3 = fgsl_rng_type(c_null_ptr, 20)
```

47.1.1.420 fgsl_rng_rand

```
type(fgsl_rng_type), public fgsl::fgsl_rng_rand = fgsl_rng_type(c_null_ptr, 21)
```

47.1.1.421 fgsl_rng_rand48

```
type(fgsl_rng_type), public fgsl::fgsl_rng_rand48 = fgsl_rng_type(c_null_ptr, 22)
```

47.1.1.422 fgsl_rng_random128_bsd

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random128_bsd = fgsl_rng_type(c_null_ptr, 23)
```

47.1.1.423 fgsl_rng_random128_glibc2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random128_glibc2 = fgsl_rng_type(c_null_ptr, 24)
```

47.1.1.424 fgsl_rng_random128_libc5

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random128_libc5 = fgsl_rng_type(c_null_ptr, 25)
```

47.1.1.425 fgsl_rng_random256_bsd

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random256_bsd = fgsl_rng_type(c_null_ptr, 26)
```

47.1.1.426 fgsl_rng_random256_glibc2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random256_glibc2 = fgsl_rng_type(c_null_ptr, 27)
```

47.1.1.427 fgsl_rng_random256_libc5

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random256_libc5 = fgsl_rng_type(c_null_ptr, 28)
```

47.1.1.428 fgsl_rng_random32_bsd

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random32_bsd = fgsl_rng_type(c_null_ptr, 29)
```

47.1.1.429 fgsl_rng_random32_glibc2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random32_glibc2 = fgsl_rng_type(c_null_ptr, 30)
```

47.1.1.430 fgsl_rng_random32_libc5

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random32_libc5 = fgsl_rng_type(c_null_ptr, 31)
```

47.1.1.431 fgsl_rng_random64_bsd

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random64_bsd = fgsl_rng_type(c_null_ptr, 32)
```

47.1.1.432 fgsl_rng_random64_glibc2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random64_glibc2 = fgsl_rng_type(c_null_ptr, 33)
```

47.1.1.433 fgsl_rng_random64_libc5

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random64_libc5 = fgsl_rng_type(c_null_ptr, 34)
```

47.1.1.434 fgsl_rng_random8_bsd

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random8_bsd = fgsl_rng_type(c_null_ptr, 35)
```

47.1.1.435 fgsl_rng_random8_glibc2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random8_glibc2 = fgsl_rng_type(c_null_ptr, 36)
```

47.1.1.436 fgsl_rng_random8_libc5

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random8_libc5 = fgsl_rng_type(c_null_ptr, 37)
```

47.1.1.437 fgsl_rng_random_bsd

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random_bsd = fgsl_rng_type(c_null_ptr, 38)
```

47.1.1.438 fgsl_rng_random_glibc2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random_glibc2 = fgsl_rng_type(c_null_ptr, 39)
```

47.1.1.439 fgsl_rng_random_libc5

```
type(fgsl_rng_type), public fgsl::fgsl_rng_random_libc5 = fgsl_rng_type(c_null_ptr, 40)
```

47.1.1.440 fgsl_rng_randu

```
type(fgsl_rng_type), public fgsl::fgsl_rng_randu = fgsl_rng_type(c_null_ptr, 41)
```

47.1.1.441 fgsl_rng_ranf

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ranf = fgsl_rng_type(c_null_ptr, 42)
```

47.1.1.442 fgsl_rng_ranlux

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ranlux = fgsl_rng_type(c_null_ptr, 43)
```

47.1.1.443 fgsl_rng_ranlux389

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ranlux389 = fgsl_rng_type(c_null_ptr, 44)
```

47.1.1.444 fgsl_rng_ranlxd1

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ranlxd1 = fgsl_rng_type(c_null_ptr, 45)
```

47.1.1.445 fgsl_rng_ranlxd2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ranlxd2 = fgsl_rng_type(c_null_ptr, 46)
```

47.1.1.446 fgsl_rng_ranlxs0

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ranlxs0 = fgsl_rng_type(c_null_ptr, 47)
```

47.1.1.447 fgsl_rng_ranlxs1

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ranlxs1 = fgsl_rng_type(c_null_ptr, 48)
```

47.1.1.448 fgsl_rng_ranlxs2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ranlxs2 = fgsl_rng_type(c_null_ptr, 49)
```

47.1.1.449 fgsl_rng_ranmar

```
type(fgsl_rng_type), public fgsl::fgsl_rng_ranmar = fgsl_rng_type(c_null_ptr, 50)
```

47.1.1.450 fgsl_rng_slatec

```
type(fgsl_rng_type), public fgsl::fgsl_rng_slatec = fgsl_rng_type(c_null_ptr, 51)
```

47.1.1.451 fgsl_rng_taus

```
type(fgsl_rng_type), public fgsl::fgsl_rng_taus = fgsl_rng_type(c_null_ptr, 52)
```

47.1.1.452 fgsl_rng_taus113

```
type(fgsl_rng_type), public fgsl::fgsl_rng_taus113 = fgsl_rng_type(c_null_ptr, 54)
```

47.1.1.453 fgsl_rng_taus2

```
type(fgsl_rng_type), public fgsl::fgsl_rng_taus2 = fgsl_rng_type(c_null_ptr, 53)
```

47.1.1.454 fgsl_rng_transputer

```
type(fgsl_rng_type), public fgsl::fgsl_rng_transputer = fgsl_rng_type(c_null_ptr, 55)
```

47.1.1.455 fgsl_rng_tt800

```
type(fgsl_rng_type), public fgsl::fgsl_rng_tt800 = fgsl_rng_type(c_null_ptr, 56)
```

47.1.1.456 fgsl_rng_uni

```
type(fgsl_rng_type), public fgsl::fgsl_rng_uni = fgsl_rng_type(c_null_ptr, 57)
```

47.1.1.457 fgsl_rng_uni32

```
type(fgsl_rng_type), public fgsl::fgsl_rng_uni32 = fgsl_rng_type(c_null_ptr, 58)
```

47.1.1.458 fgsl_rng_vax

```
type(fgsl_rng_type), public fgsl::fgsl_rng_vax = fgsl_rng_type(c_null_ptr, 59)
```

47.1.1.459 fgsl_rng_waterman14

```
type(fgsl_rng_type), public fgsl::fgsl_rng_waterman14 = fgsl_rng_type(c_null_ptr, 60)
```

47.1.1.460 fgsl_rng_zuf

```
type(fgsl_rng_type), public fgsl::fgsl_rng_zuf = fgsl_rng_type(c_null_ptr, 61)
```

47.1.1.461 fgsl_root_fdfsolver_newton

```
type(fgsl_root_fdfsolver_type), parameter, public fgsl::fgsl_root_fdfsolver_newton = fgsl_root_fdfsolver_type(1)
```

47.1.1.462 fgsl_root_fdfsolver_secant

```
type(fgsl_root_fdfsolver_type), parameter, public fgsl::fgsl_root_fdfsolver_secant = fgsl_root_fdfsolver_type(2)
```

47.1.1.463 fgsl_root_fdfsolver_steffenson

```
type(fgsl_root_fdfsolver_type), parameter, public fgsl::fgsl_root_fdfsolver_steffenson = fgsl_root_fdfsolver_type(3)
```

47.1.1.464 fgsl_root_fsolver_bisection

```
type(fgsl_root_fsolver_type), parameter, public fgsl::fgsl_root_fsolver_bisection = fgsl_root_fsolver_type(1)
```


47.1.1.465 fgsl_root_fsolver_brent

```
type(fgsl_root_fsolver_type), parameter, public fgsl::fgsl_root_fsolver_brent = fgsl_root_fsolver_type(2)
```

47.1.1.466 fgsl_root_fsolver_falsepos

```
type(fgsl_root_fsolver_type), parameter, public fgsl::fgsl_root_fsolver_falsepos = fgsl_root_fsolver_type(3)
```

47.1.1.467 fgsl_sf_legendre_full

```
type(fgsl_sf_legendre_t), parameter, public fgsl::fgsl_sf_legendre_full = fgsl_sf_legendre_t(2)
```

47.1.1.468 fgsl_sf_legendre_none

```
type(fgsl_sf_legendre_t), parameter, public fgsl::fgsl_sf_legendre_none = fgsl_sf_legendre_t(3)
```

47.1.1.469 fgsl_sf_legendre_schmidt

```
type(fgsl_sf_legendre_t), parameter, public fgsl::fgsl_sf_legendre_schmidt = fgsl_sf_legendre_t(0)
```

47.1.1.470 fgsl_sf_legendre_spharm

```
type(fgsl_sf_legendre_t), parameter, public fgsl::fgsl_sf_legendre_spharm = fgsl_sf_legendre_t(1)
```

47.1.1.471 fgsl_size_t

```
integer, parameter, public fgsl::fgsl_size_t = c_size_t
```

47.1.1.472 fgsl_splinalg_itsolve_gmres

```
type(fgsl_splinalg_itsolve_type), parameter, public fgsl::fgsl_splinalg_itsolve_gmres =  
fgsl_splinalg_itsolve_type(1)
```

47.1.1.473 fgsl_spmatrix_ccs

```
integer(fgsl_size_t), parameter, public fgsl::fgsl_spmatrix_ccs = 1
```

47.1.1.474 fgsl_spmatrix_crs

```
integer(fgsl_size_t), parameter, public fgsl::fgsl_spmatrix_crs = 2
```

47.1.1.475 fgsl_spmatrix_triplet

```
integer(fgsl_size_t), parameter, public fgsl::fgsl_spmatrix_triplet = 0
```

47.1.1.476 fgsl_spmatrix_type_coo

```
integer(fgsl_size_t), parameter, public fgsl::fgsl_spmatrix_type_coo = fgsl_spmatrix_triplet
```

47.1.1.477 fgsl_spmatrix_type_csc

```
integer(fgsl_size_t), parameter, public fgsl::fgsl_spmatrix_type_csc = fgsl_spmatrix_ccs
```

47.1.1.478 fgsl_spmatrix_type_csr

```
integer(fgsl_size_t), parameter, public fgsl::fgsl_spmatrix_type_csr = fgsl_spmatrix_crs
```

47.1.1.479 fgsl_strmax

```
integer, parameter, public fgsl::fgsl_strmax = 128
```

47.1.1.480 fgsl_success

```
integer(fgsl_int), parameter, public fgsl::fgsl_success = 0
```

47.1.1.481 fgsl_vegas_mode_importance

```
integer(c_int), parameter, public fgsl::fgsl_vegas_mode_importance = 1
```

47.1.1.482 fgsl_vegas_mode_importance_only

```
integer(c_int), parameter, public fgsl::fgsl_vegas_mode_importance_only = 0
```

47.1.1.483 fgsl_vegas_mode_stratified

```
integer(c_int), parameter, public fgsl::fgsl_vegas_mode_stratified = -1
```

47.1.1.484 fgsl_version

```
character(kind=fgsl_char, len=*), parameter, public fgsl::fgsl_version = PACKAGE_VERSION
```

47.1.1.485 fgsl_wavelet_bspline

```
type(fgsl_wavelet_type), parameter, public fgsl::fgsl_wavelet_bspline = fgsl_wavelet_type(5)
```

47.1.1.486 fgsl_wavelet_bspline_centered

```
type(fgsl_wavelet_type), parameter, public fgsl::fgsl_wavelet_bspline_centered = fgsl_wavelet_type(6)
```

47.1.1.487 fgsl_wavelet_daubechies

```
type(fgsl_wavelet_type), parameter, public fgsl::fgsl_wavelet_daubechies = fgsl_wavelet_type(1)
```

47.1.1.488 fgsl_wavelet_daubechies_centered

```
type(fgsl_wavelet_type), parameter, public fgsl::fgsl_wavelet_daubechies_centered = fgsl_wavelet_type(2)
```

47.1.1.489 fgsl_wavelet_haar

```
type(fgsl_wavelet_type), parameter, public fgsl::fgsl_wavelet_haar = fgsl_wavelet_type(3)
```

47.1.1.490 fgsl_wavelet_haar_centered

```
type(fgsl_wavelet_type), parameter, public fgsl::fgsl_wavelet_haar_centered = fgsl_wavelet_type(4)
```

47.1.1.491 gsl_sf_legendre_full

```
integer(fgsl_int), parameter, public fgsl::gsl_sf_legendre_full = 2
```

47.1.1.492 gsl_sf_legendre_none

```
integer(fgsl_int), parameter, public fgsl::gsl_sf_legendre_none = 3
```

47.1.1.493 gsl_sf_legendre_schmidt

```
integer(fgsl_int), parameter, public fgsl::gsl_sf_legendre_schmidt = 0
```

47.1.1.494 gsl_sf_legendre_spharm

```
integer(fgsl_int), parameter, public fgsl::gsl_sf_legendre_spharm = 1
```

47.1.1.495 m_1_pi

```
real(fgsl_extended), parameter, public fgsl::m_1_pi = 0.31830988618379067153776752675_fgsl↵  
extended
```

47.1.1.496 m_2_pi

```
real(fgsl_extended), parameter, public fgsl::m_2_pi = 0.63661977236758134307553505349_fgsl_↵  
extended
```

47.1.1.497 m_2_sqrtpi

```
real(fgsl_extended), parameter, public fgsl::m_2_sqrtpi = 1.12837916709551257389615890312_↵  
fgsl_extended
```

47.1.1.498 m_e

```
real(fgsl_extended), parameter, public fgsl::m_e = 2.71828182845904523536028747135_fgsl_↵  
extended
```

47.1.1.499 m_euler

```
real(fgsl_extended), parameter, public fgsl::m_euler = 0.57721566490153286060651209008_fgsl_↵  
extended
```

47.1.1.500 m_ln10

```
real(fgsl_extended), parameter, public fgsl::m_ln10 = 2.30258509299404568401799145468_fgsl_↵  
extended
```

47.1.1.501 m_ln2

```
real(fgsl_extended), parameter, public fgsl::m_ln2 = 0.69314718055994530941723212146_fgsl_↵  
extended
```

47.1.1.502 m_lmpi

```
real(fgsl_extended), parameter, public fgsl::m_lmpi = 1.14472988584940017414342735135_fgsl_↵  
extended
```

47.1.1.503 m_log10e

```
real(fgsl_extended), parameter, public fgsl::m_log10e = 0.43429448190325182765112891892_fgsl_↵  
_extended
```

47.1.1.504 m_log2e

```
real(fgsl_extended), parameter, public fgsl::m_log2e = 1.44269504088896340735992468100_fgsl_↵  
extended
```

47.1.1.505 m_pi

```
real(fgsl_extended), parameter, public fgsl::m_pi = 3.14159265358979323846264338328_fgsl_↵  
extended
```

47.1.1.506 m_pi_2

```
real(fgsl_extended), parameter, public fgsl::m_pi_2 = 1.57079632679489661923132169164_fgsl_↵  
extended
```

47.1.1.507 m_pi_4

```
real(fgsl_extended), parameter, public fgsl::m_pi_4 = 0.78539816339744830961566084582_fgsl_↵  
extended
```

47.1.1.508 m_sqrt1_2

```
real(fgsl_extended), parameter, public fgsl::m_sqrt1_2 = 0.70710678118654752440084436210_↵  
fgsl_extended
```

47.1.1.509 m_sqrt2

```
real(fgsl_extended), parameter, public fgsl::m_sqrt2 = 1.41421356237309504880168872421_fgsl_↵  
extended
```

47.1.1.510 m_sqrt3

```
real(fgsl_extended), parameter, public fgsl::m_sqrt3 = 1.73205080756887729352744634151_fgsl_↵  
extended
```

47.1.1.511 m_sqrtpi

```
real(fgsl_extended), parameter, public fgsl::m_sqrtpi = 1.77245385090551602729816748334_fgsl_↵  
_extended
```


Chapter 48

Data Type Documentation

48.1 assignment(=) Interface Reference

Public Member Functions

- [fgsl_complex_to_complex](#)
- [complex_to_fgsl_complex](#)
- [gsl_sf_to_fgsl_sf](#)
- [gsl_sfe10_to_fgsl_sfe10](#)
- [fgsl_vector_to_array](#)
- [fgsl_vector_complex_to_array](#)
- [fgsl_matrix_to_array](#)
- [fgsl_matrix_complex_to_array](#)

48.1.1 Member Function/Subroutine Documentation

48.1.1.1 complex_to_fgsl_complex()

```
assignment(=)::complex_to_fgsl_complex
```

48.1.1.2 fgsl_complex_to_complex()

```
assignment(=)::fgsl_complex_to_complex
```

48.1.1.3 fgsl_matrix_complex_to_array()

```
assignment(=)::fgsl_matrix_complex_to_array
```

48.1.1.4 fgsl_matrix_to_array()

```
assignment(=)::fgsl_matrix_to_array
```

48.1.1.5 fgsl_vector_complex_to_array()

```
assignment(=)::fgsl_vector_complex_to_array
```

48.1.1.6 fgsl_vector_to_array()

```
assignment(=)::fgsl_vector_to_array
```

48.1.1.7 gsl_sf_to_fgsl_sf()

```
assignment(=)::gsl_sf_to_fgsl_sf
```

48.1.1.8 gsl_sfe10_to_fgsl_sfe10()

```
assignment(=)::gsl_sfe10_to_fgsl_sfe10
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.2 fgsl::fgsl_bspline_workspace Type Reference

Public Attributes

- `type(c_ptr) gsl_bspline_workspace = c_null_ptr`

48.2.1 Member Data Documentation

48.2.1.1 gsl_bspline_workspace

```
type(c_ptr) fgsl::fgsl_bspline_workspace::gsl_bspline_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.3 fgsl::fgsl_cheb_series Type Reference

Public Attributes

- type(c_ptr) [gsl_cheb_series](#) = c_null_ptr

48.3.1 Member Data Documentation

48.3.1.1 gsl_cheb_series

```
type(c_ptr) fgsl::fgsl_cheb_series::gsl_cheb_series = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.4 fgsl::fgsl_combination Type Reference

Public Attributes

- type(c_ptr) [gsl_combination](#) = c_null_ptr

48.4.1 Member Data Documentation

48.4.1.1 gsl_combination

```
type(c_ptr) fgsl::fgsl_combination::gsl_combination = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.5 fgsl::fgsl_dht Type Reference

Public Attributes

- `type(c_ptr) fgsl_dht = c_null_ptr`

48.5.1 Member Data Documentation

48.5.1.1 [fgsl_dht](#)

```
type(c_ptr) fgsl::fgsl_dht::fgsl_dht = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.6 fgsl::fgsl_eigen_gen_workspace Type Reference

Public Attributes

- `type(c_ptr) fgsl_eigen_gen_workspace = c_null_ptr`

48.6.1 Member Data Documentation

48.6.1.1 [fgsl_eigen_gen_workspace](#)

```
type(c_ptr) fgsl::fgsl_eigen_gen_workspace::fgsl_eigen_gen_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.7 fgsl::fgsl_eigen_genherm_workspace Type Reference

Public Attributes

- `type(c_ptr) fgsl_eigen_genherm_workspace = c_null_ptr`

48.7.1 Member Data Documentation

48.7.1.1 gsl_eigen_genherm_workspace

```
type(c_ptr) fgsl::fgsl_eigen_genherm_workspace::gsl_eigen_genherm_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.8 fgsl::fgsl_eigen_genhermv_workspace Type Reference

Public Attributes

- type(c_ptr) [gsl_eigen_genhermv_workspace](#) = c_null_ptr

48.8.1 Member Data Documentation

48.8.1.1 gsl_eigen_genhermv_workspace

```
type(c_ptr) fgsl::fgsl_eigen_genhermv_workspace::gsl_eigen_genhermv_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.9 fgsl::fgsl_eigen_gensymm_workspace Type Reference

Public Attributes

- type(c_ptr) [gsl_eigen_gensymm_workspace](#) = c_null_ptr

48.9.1 Member Data Documentation

48.9.1.1 `gsl_eigen_gensymm_workspace`

```
type(c_ptr) fgsl::fgsl_eigen_gensymm_workspace::gsl_eigen_gensymm_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.10 `fgsl::fgsl_eigen_gensymmv_workspace` Type Reference

Public Attributes

- `type(c_ptr)` [gsl_eigen_gensymmv_workspace](#) = `c_null_ptr`

48.10.1 Member Data Documentation

48.10.1.1 `gsl_eigen_gensymmv_workspace`

```
type(c_ptr) fgsl::fgsl_eigen_gensymmv_workspace::gsl_eigen_gensymmv_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.11 `fgsl::fgsl_eigen_genv_workspace` Type Reference

Public Attributes

- `type(c_ptr)` [gsl_eigen_genv_workspace](#) = `c_null_ptr`

48.11.1 Member Data Documentation

48.11.1.1 `gsl_eigen_genv_workspace`

```
type(c_ptr) fgsl::fgsl_eigen_genv_workspace::gsl_eigen_genv_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.12 fgsl::fgsl_eigen_herm_workspace Type Reference

Public Attributes

- `type(c_ptr) gsl_eigen_herm_workspace = c_null_ptr`

48.12.1 Member Data Documentation

48.12.1.1 [gsl_eigen_herm_workspace](#)

```
type(c_ptr) fgsl::fgsl_eigen_herm_workspace::gsl_eigen_herm_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.13 fgsl::fgsl_eigen_hermv_workspace Type Reference

Public Attributes

- `type(c_ptr) gsl_eigen_hermv_workspace = c_null_ptr`

48.13.1 Member Data Documentation

48.13.1.1 [gsl_eigen_hermv_workspace](#)

```
type(c_ptr) fgsl::fgsl_eigen_hermv_workspace::gsl_eigen_hermv_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.14 fgsl::fgsl_eigen_nonsymm_workspace Type Reference

Public Attributes

- `type(c_ptr) gsl_eigen_nonsymm_workspace = c_null_ptr`

48.14.1 Member Data Documentation

48.14.1.1 `gsl_eigen_nonsymm_workspace`

```
type(c_ptr) fgsl::fgsl_eigen_nonsymm_workspace::gsl_eigen_nonsymm_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.15 `fgsl::fgsl_eigen_nonsymmv_workspace` Type Reference

Public Attributes

- `type(c_ptr) gsl_eigen_nonsymmv_workspace = c_null_ptr`

48.15.1 Member Data Documentation

48.15.1.1 `gsl_eigen_nonsymmv_workspace`

```
type(c_ptr) fgsl::fgsl_eigen_nonsymmv_workspace::gsl_eigen_nonsymmv_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.16 `fgsl::fgsl_eigen_symm_workspace` Type Reference

Public Attributes

- `type(c_ptr) gsl_eigen_symm_workspace = c_null_ptr`

48.16.1 Member Data Documentation

48.16.1.1 gsl_eigen_symm_workspace

```
type(c_ptr) fgsl::fgsl_eigen_symm_workspace::gsl_eigen_symm_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.17 fgsl::fgsl_eigen_symmv_workspace Type Reference

Public Attributes

- type(c_ptr) [gsl_eigen_symmv_workspace](#) = c_null_ptr

48.17.1 Member Data Documentation

48.17.1.1 gsl_eigen_symmv_workspace

```
type(c_ptr) fgsl::fgsl_eigen_symmv_workspace::gsl_eigen_symmv_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.18 fgsl::fgsl_error_handler_t Type Reference

Public Attributes

- type(c_funptr) [gsl_error_handler_t](#) = c_null_funptr

48.18.1 Member Data Documentation

48.18.1.1 gsl_error_handler_t

```
type(c_funptr) fgsl::fgsl_error_handler_t::gsl_error_handler_t = c_null_funptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.19 fgsl::fgsl_fft_complex_wavetable Type Reference

Public Attributes

- `type(c_ptr) fgsl_fft_complex_wavetable = c_null_ptr`

48.19.1 Member Data Documentation

48.19.1.1 `fgsl_fft_complex_wavetable`

```
type(c_ptr) fgsl::fgsl_fft_complex_wavetable::fgsl_fft_complex_wavetable = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.20 fgsl::fgsl_fft_complex_workspace Type Reference

Public Attributes

- `type(c_ptr) fgsl_fft_complex_workspace = c_null_ptr`

48.20.1 Member Data Documentation

48.20.1.1 `fgsl_fft_complex_workspace`

```
type(c_ptr) fgsl::fgsl_fft_complex_workspace::fgsl_fft_complex_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.21 fgsl::fgsl_fft_halfcomplex_wavetable Type Reference

Public Attributes

- `type(c_ptr) fgsl_fft_halfcomplex_wavetable = c_null_ptr`

48.21.1 Member Data Documentation

48.21.1.1 gsl_fft_halfcomplex_wavetable

```
type(c_ptr) fgsl::fgsl_fft_halfcomplex_wavetable::gsl_fft_halfcomplex_wavetable = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.22 fgsl::fgsl_fft_real_wavetable Type Reference

Public Attributes

- type(c_ptr) [gsl_fft_real_wavetable](#) = c_null_ptr

48.22.1 Member Data Documentation

48.22.1.1 gsl_fft_real_wavetable

```
type(c_ptr) fgsl::fgsl_fft_real_wavetable::gsl_fft_real_wavetable = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.23 fgsl::fgsl_fft_real_workspace Type Reference

Public Attributes

- type(c_ptr) [gsl_fft_real_workspace](#) = c_null_ptr

48.23.1 Member Data Documentation

48.23.1.1 `gsl_fft_real_workspace`

```
type(c_ptr) fgsl::fgsl_fft_real_workspace::gsl_fft_real_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.24 `fgsl::fgsl_file` Type Reference

Public Attributes

- `type(c_ptr) gsl_file = c_null_ptr`

48.24.1 Member Data Documentation

48.24.1.1 `gsl_file`

```
type(c_ptr) fgsl::fgsl_file::gsl_file = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.25 `fgsl::fgsl_filter_gaussian_workspace` Type Reference

Public Attributes

- `type(c_ptr) gsl_filter_gaussian_workspace`

48.25.1 Member Data Documentation

48.25.1.1 `gsl_filter_gaussian_workspace`

```
type(c_ptr) fgsl::fgsl_filter_gaussian_workspace::gsl_filter_gaussian_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.26 fgsl::fgsl_filter_impulse_workspace Type Reference

Public Attributes

- `type(c_ptr)` [gsl_filter_impulse_workspace](#)

48.26.1 Member Data Documentation

48.26.1.1 gsl_filter_impulse_workspace

```
type(c_ptr) fgsl::fgsl_filter_impulse_workspace::gsl_filter_impulse_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.27 fgsl::fgsl_filter_median_workspace Type Reference

Public Attributes

- `type(c_ptr)` [gsl_filter_median_workspace](#)

48.27.1 Member Data Documentation

48.27.1.1 gsl_filter_median_workspace

```
type(c_ptr) fgsl::fgsl_filter_median_workspace::gsl_filter_median_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.28 fgsl::fgsl_filter_rmedian_workspace Type Reference

Public Attributes

- `type(c_ptr)` [gsl_filter_rmedian_workspace](#)

48.28.1 Member Data Documentation

48.28.1.1 `gsl_filter_rmedian_workspace`

```
type(c_ptr) fgsl::fgsl_filter_rmedian_workspace::gsl_filter_rmedian_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.29 `fgsl::fgsl_function` Type Reference

Public Attributes

- `type(c_ptr) gsl_function = c_null_ptr`

48.29.1 Member Data Documentation

48.29.1.1 `gsl_function`

```
type(c_ptr) fgsl::fgsl_function::gsl_function = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.30 `fgsl::fgsl_function_fdf` Type Reference

Public Attributes

- `type(c_ptr) gsl_function_fdf = c_null_ptr`

48.30.1 Member Data Documentation

48.30.1.1 gsl_function_fdf

```
type(c_ptr) fgsl::fgsl_function_fdf::gsl_function_fdf = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.31 fgsl::fgsl_histogram Type Reference

Public Attributes

- `type(c_ptr) gsl_histogram = c_null_ptr`

48.31.1 Member Data Documentation

48.31.1.1 gsl_histogram

```
type(c_ptr) fgsl::fgsl_histogram::gsl_histogram = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.32 fgsl::fgsl_histogram2d Type Reference

Public Attributes

- `type(c_ptr) gsl_histogram2d = c_null_ptr`

48.32.1 Member Data Documentation

48.32.1.1 gsl_histogram2d

```
type(c_ptr) fgsl::fgsl_histogram2d::gsl_histogram2d = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.33 fgsl::fgsl_histogram2d_pdf Type Reference

Public Attributes

- `type(c_ptr) fgsl_histogram2d_pdf = c_null_ptr`

48.33.1 Member Data Documentation

48.33.1.1 fgsl_histogram2d_pdf

```
type(c_ptr) fgsl::fgsl_histogram2d_pdf::fgsl_histogram2d_pdf = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.34 fgsl::fgsl_histogram_pdf Type Reference

Public Attributes

- `type(c_ptr) fgsl_histogram_pdf = c_null_ptr`

48.34.1 Member Data Documentation

48.34.1.1 fgsl_histogram_pdf

```
type(c_ptr) fgsl::fgsl_histogram_pdf::fgsl_histogram_pdf = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.35 fgsl_ieee_fprintf Interface Reference

Public Member Functions

- [fgsl_ieee_fprintf_float](#)
- [fgsl_ieee_fprintf_double](#)

48.35.1 Member Function/Subroutine Documentation

48.35.1.1 fgsl_ieee_fprintf_double()

```
fgsl_ieee_fprintf::fgsl_ieee_fprintf_double
```

48.35.1.2 fgsl_ieee_fprintf_float()

```
fgsl_ieee_fprintf::fgsl_ieee_fprintf_float
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.36 fgsl_ieee_printf Interface Reference

Public Member Functions

- [fgsl_ieee_printf_float](#)
- [fgsl_ieee_printf_double](#)

48.36.1 Member Function/Subroutine Documentation

48.36.1.1 fgsl_ieee_printf_double()

```
fgsl_ieee_printf::fgsl_ieee_printf_double
```

48.36.1.2 fgsl_ieee_printf_float()

```
fgsl_ieee_printf::fgsl_ieee_printf_float
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.37 fgsl::fgsl_integration_cquad_workspace Type Reference

Public Attributes

- type(c_ptr) [gsl_integration_cquad_workspace](#) = c_null_ptr

48.37.1 Member Data Documentation

48.37.1.1 gsl_integration_cquad_workspace

```
type(c_ptr) fgsl::fgsl_integration_cquad_workspace::gsl_integration_cquad_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.38 fgsl::fgsl_integration_fixed_workspace Type Reference

Public Attributes

- type(c_ptr) [gsl_integration_fixed_workspace](#) = c_null_ptr

48.38.1 Member Data Documentation

48.38.1.1 gsl_integration_fixed_workspace

```
type(c_ptr) fgsl::fgsl_integration_fixed_workspace::gsl_integration_fixed_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.39 fgsl::fgsl_integration_glfixed_table Type Reference

Public Attributes

- type(c_ptr) [gsl_integration_glfixed_table](#) = c_null_ptr

48.39.1 Member Data Documentation

48.39.1.1 gsl_integration_glfixed_table

```
type(c_ptr) fgsl::fgsl_integration_glfixed_table::gsl_integration_glfixed_table = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.40 fgsl::fgsl_integration_qawo_table Type Reference

Public Attributes

- `type(c_ptr) gsl_integration_qawo_table = c_null_ptr`

48.40.1 Member Data Documentation

48.40.1.1 gsl_integration_qawo_table

```
type(c_ptr) fgsl::fgsl_integration_qawo_table::gsl_integration_qawo_table = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.41 fgsl::fgsl_integration_qaws_table Type Reference

Public Attributes

- `type(c_ptr) gsl_integration_qaws_table = c_null_ptr`

48.41.1 Member Data Documentation

48.41.1.1 `gsl_integration_qaws_table`

```
type(c_ptr) fgsl::fgsl_integration_qaws_table::gsl_integration_qaws_table = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.42 `fgsl::fgsl_integration_romberg_workspace` Type Reference

Public Attributes

- `type(c_ptr) gsl_integration_romberg_workspace = c_null_ptr`

48.42.1 Member Data Documentation

48.42.1.1 `gsl_integration_romberg_workspace`

```
type(c_ptr) fgsl::fgsl_integration_romberg_workspace::gsl_integration_romberg_workspace = c_↵  
null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.43 `fgsl::fgsl_integration_workspace` Type Reference

Public Attributes

- `type(c_ptr) gsl_integration_workspace = c_null_ptr`

48.43.1 Member Data Documentation

48.43.1.1 `gsl_integration_workspace`

```
type(c_ptr) fgsl::fgsl_integration_workspace::gsl_integration_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.44 fgsl::fgsl_interp Type Reference

Public Attributes

- `type(c_ptr) fgsl_interp = c_null_ptr`

48.44.1 Member Data Documentation

48.44.1.1 `fgsl_interp`

```
type(c_ptr) fgsl::fgsl_interp::fgsl_interp = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.45 fgsl::fgsl_interp2d Type Reference

Public Attributes

- `type(c_ptr) fgsl_interp2d = c_null_ptr`

48.45.1 Member Data Documentation

48.45.1.1 `fgsl_interp2d`

```
type(c_ptr) fgsl::fgsl_interp2d::fgsl_interp2d = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.46 fgsl::fgsl_interp2d_type Type Reference

Public Attributes

- `integer(fgsl_int) which = 0`

48.46.1 Member Data Documentation

48.46.1.1 which

```
integer(fgsl\_int) fgsl::fgsl_interp2d_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.47 fgsl::fgsl_interp_accel Type Reference

Public Attributes

- type(c_ptr) [gsl_interp_accel](#) = c_null_ptr

48.47.1 Member Data Documentation

48.47.1.1 gsl_interp_accel

```
type(c_ptr) fgsl::fgsl_interp_accel::gsl_interp_accel = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.48 fgsl::fgsl_interp_type Type Reference

Public Attributes

- integer([fgsl_int](#)) [which](#) = 0

48.48.1 Member Data Documentation

48.48.1.1 which

```
integer(fgsl_int) fgsl::fgsl_interp_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.49 fgsl::fgsl_matrix Type Reference

Public Attributes

- type(c_ptr) [gsl_matrix](#) = c_null_ptr

48.49.1 Member Data Documentation

48.49.1.1 gsl_matrix

```
type(c_ptr) fgsl::fgsl_matrix::gsl_matrix = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.50 fgsl_matrix_align Interface Reference

Public Member Functions

- [fgsl_matrix_align](#)
- [fgsl_matrix_pointer_align](#)
- [fgsl_matrix_complex_align](#)
- [fgsl_matrix_complex_pointer_align](#)

48.50.1 Constructor & Destructor Documentation

48.50.1.1 fgsl_matrix_align()

```
fgsl_matrix_align::fgsl_matrix_align
```

48.50.2 Member Function/Subroutine Documentation

48.50.2.1 fgsl_matrix_complex_align()

```
fgsl_matrix_align::fgsl_matrix_complex_align
```

48.50.2.2 fgsl_matrix_complex_pointer_align()

```
fgsl_matrix_align::fgsl_matrix_complex_pointer_align
```

48.50.2.3 fgsl_matrix_pointer_align()

```
fgsl_matrix_align::fgsl_matrix_pointer_align
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.51 fgsl::fgsl_matrix_complex Type Reference

Public Attributes

- `type(c_ptr)` [gsl_matrix_complex](#) = `c_null_ptr`

48.51.1 Member Data Documentation

48.51.1.1 gsl_matrix_complex

```
type(c_ptr) fgsl::fgsl_matrix_complex::gsl_matrix_complex = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.52 fgsl_matrix_free Interface Reference

Public Member Functions

- [fgsl_matrix_free](#)
- [fgsl_matrix_complex_free](#)

48.52.1 Constructor & Destructor Documentation

48.52.1.1 fgsl_matrix_free()

```
fgsl_matrix_free::fgsl_matrix_free
```

48.52.2 Member Function/Subroutine Documentation

48.52.2.1 fgsl_matrix_complex_free()

```
fgsl_matrix_free::fgsl_matrix_complex_free
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.53 fgsl_matrix_init Interface Reference

Public Member Functions

- [fgsl_matrix_init](#)
- [fgsl_matrix_init_legacy](#)
- [fgsl_matrix_complex_init](#)
- [fgsl_matrix_complex_init_legacy](#)

48.53.1 Constructor & Destructor Documentation

48.53.1.1 fgsl_matrix_init()

```
fgsl_matrix_init::fgsl_matrix_init
```

48.53.2 Member Function/Subroutine Documentation

48.53.2.1 fgsl_matrix_complex_init()

fgsl_matrix_init::fgsl_matrix_complex_init

48.53.2.2 fgsl_matrix_complex_init_legacy()

fgsl_matrix_init::fgsl_matrix_complex_init_legacy

48.53.2.3 fgsl_matrix_init_legacy()

fgsl_matrix_init::fgsl_matrix_init_legacy

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.54 fgsl_matrix_to_fptr Interface Reference

Public Member Functions

- [fgsl_matrix_to_fptr](#)
- [fgsl_matrix_complex_to_fptr](#)

48.54.1 Constructor & Destructor Documentation

48.54.1.1 fgsl_matrix_to_fptr()

fgsl_matrix_to_fptr::fgsl_matrix_to_fptr

48.54.2 Member Function/Subroutine Documentation

48.54.2.1 fgsl_matrix_complex_to_fptr()

```
fgsl_matrix_to_fptr::fgsl_matrix_complex_to_fptr
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.55 fgsl::fgsl_min_fminimizer Type Reference

Public Attributes

- `type(c_ptr)` [fgsl_min_fminimizer](#) = `c_null_ptr`

48.55.1 Member Data Documentation

48.55.1.1 gsl_min_fminimizer

```
type(c_ptr) fgsl::fgsl_min_fminimizer::gsl_min_fminimizer = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.56 fgsl::fgsl_min_fminimizer_type Type Reference

Public Attributes

- `integer(c_int)` [which](#) = 0

48.56.1 Member Data Documentation

48.56.1.1 which

```
integer(c_int) fgsl::fgsl_min_fminimizer_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.57 fgsl::fgsl_mode_t Type Reference

Public Attributes

- integer(c_int) [gsl_mode](#) = 0

48.57.1 Member Data Documentation

48.57.1.1 gsl_mode

```
integer(c_int) fgsl::fgsl_mode_t::gsl_mode = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.58 fgsl::fgsl_monte_function Type Reference

Public Attributes

- type(c_ptr) [gsl_monte_function](#) = c_null_ptr

48.58.1 Member Data Documentation

48.58.1.1 gsl_monte_function

```
type(c_ptr) fgsl::fgsl_monte_function::gsl_monte_function = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.59 fgsl::fgsl_monte_miser_state Type Reference

Public Attributes

- type(c_ptr) [gsl_monte_miser_state](#) = c_null_ptr

48.59.1 Member Data Documentation

48.59.1.1 gsl_monte_miser_state

```
type(c_ptr) fgsl::fgsl_monte_miser_state::gsl_monte_miser_state = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.60 fgsl::fgsl_monte_plain_state Type Reference

Public Attributes

- type(c_ptr) [gsl_monte_plain_state](#) = c_null_ptr

48.60.1 Member Data Documentation

48.60.1.1 gsl_monte_plain_state

```
type(c_ptr) fgsl::fgsl_monte_plain_state::gsl_monte_plain_state = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.61 fgsl::fgsl_monte_vegas_state Type Reference

Public Attributes

- type(c_ptr) [gsl_monte_vegas_state](#) = c_null_ptr

48.61.1 Member Data Documentation

48.61.1.1 `gsl_monte_vegas_state`

```
type(c_ptr) fgsl::fgsl_monte_vegas_state::gsl_monte_vegas_state = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.62 `fgsl::fgsl_movstat_function` Type Reference

[fgsl_movstat_function](#) interoperates with `gsl_movstat_function`

Public Attributes

- `type(c_funptr)` [function](#)
- `type(c_ptr)` [params](#)

48.62.1 Detailed Description

[fgsl_movstat_function](#) interoperates with `gsl_movstat_function`

48.62.2 Member Data Documentation

48.62.2.1 `function`

```
type(c_funptr) fgsl::fgsl_movstat_function::function
```

48.62.2.2 `params`

```
type(c_ptr) fgsl::fgsl_movstat_function::params
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.63 `fgsl::fgsl_movstat_workspace` Type Reference

Public Attributes

- `type(c_ptr)` [gsl_movstat_workspace](#)

48.63.1 Member Data Documentation

48.63.1.1 gsl_movstat_workspace

```
type(c_ptr) fgsl::fgsl_movstat_workspace::gsl_movstat_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.64 fgsl_multifit_eval_wdf Interface Reference

Public Member Functions

- [fgsl_multifit_eval_wdf_wts](#)
- [fgsl_multifit_eval_wdf_nowts](#)

48.64.1 Member Function/Subroutine Documentation

48.64.1.1 fgsl_multifit_eval_wdf_nowts()

```
fgsl_multifit_eval_wdf::fgsl_multifit_eval_wdf_nowts
```

48.64.1.2 fgsl_multifit_eval_wdf_wts()

```
fgsl_multifit_eval_wdf::fgsl_multifit_eval_wdf_wts
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.65 fgsl_multifit_eval_wf Interface Reference

Public Member Functions

- [fgsl_multifit_eval_wf_wts](#)
- [fgsl_multifit_eval_wf_nowts](#)

48.65.1 Member Function/Subroutine Documentation

48.65.1.1 fgsl_multifit_eval_wf_nowts()

```
fgsl_multifit_eval_wf::fgsl_multifit_eval_wf_nowts
```

48.65.1.2 fgsl_multifit_eval_wf_wts()

```
fgsl_multifit_eval_wf::fgsl_multifit_eval_wf_wts
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.66 fgsl::fgsl_multifit_fdfridge Type Reference

Public Attributes

- `type(c_ptr)` [gsl_multifit_fdfridge](#) = `c_null_ptr`

48.66.1 Member Data Documentation

48.66.1.1 gsl_multifit_fdfridge

```
type(c_ptr) fgsl::fgsl_multifit_fdfridge::gsl_multifit_fdfridge = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.67 fgsl::fgsl_multifit_fdfsolver Type Reference

Public Attributes

- `type(c_ptr)` [gsl_multifit_fdfsolver](#) = `c_null_ptr`

48.67.1 Member Data Documentation

48.67.1.1 gsl_multifit_fdfsolver

```
type(c_ptr) fgsl::fgsl_multifit_fdfsolver::gsl_multifit_fdfsolver = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.68 fgsl_multifit_fdfsolver_dif_df Interface Reference

Public Member Functions

- [fgsl_multifit_fdfsolver_dif_df_wts](#)
- [fgsl_multifit_fdfsolver_dif_df_nowts](#)

48.68.1 Member Function/Subroutine Documentation

48.68.1.1 fgsl_multifit_fdfsolver_dif_df_nowts()

```
fgsl_multifit_fdfsolver_dif_df::fgsl_multifit_fdfsolver_dif_df_nowts
```

48.68.1.2 fgsl_multifit_fdfsolver_dif_df_wts()

```
fgsl_multifit_fdfsolver_dif_df::fgsl_multifit_fdfsolver_dif_df_wts
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.69 fgsl::fgsl_multifit_fdfsolver_type Type Reference

Public Attributes

- `integer(c_int)` [which](#) = 0

48.69.1 Member Data Documentation

48.69.1.1 which

```
integer(c_int) fgsl::fgsl_multifit_fdfsolver_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.70 fgsl::fgsl_multifit_fsolver Type Reference

Public Attributes

- type(c_ptr) [gsl_multifit_fsolver](#) = c_null_ptr

48.70.1 Member Data Documentation

48.70.1.1 gsl_multifit_fsolver

```
type(c_ptr) fgsl::fgsl_multifit_fsolver::gsl_multifit_fsolver = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.71 fgsl::fgsl_multifit_fsolver_type Type Reference

Public Attributes

- integer(c_int) [which](#) = 0

48.71.1 Member Data Documentation

48.71.1.1 which

```
integer(c_int) fgsl::fgsl_multifit_fsolver_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.72 fgsl::fgsl_multifit_function Type Reference

Public Attributes

- type(c_ptr) [gsl_multifit_function](#) = c_null_ptr

48.72.1 Member Data Documentation

48.72.1.1 gsl_multifit_function

```
type(c_ptr) fgsl::fgsl_multifit_function::gsl_multifit_function = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.73 fgsl::fgsl_multifit_function_fdf Type Reference

Public Attributes

- type(c_ptr) [gsl_multifit_function_fdf](#) = c_null_ptr

48.73.1 Member Data Documentation

48.73.1.1 gsl_multifit_function_fdf

```
type(c_ptr) fgsl::fgsl_multifit_function_fdf::gsl_multifit_function_fdf = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.74 fgsl::fgsl_multifit_linear_workspace Type Reference

Public Attributes

- `type(c_ptr) fgsl_multifit_linear_workspace = c_null_ptr`

48.74.1 Member Data Documentation

48.74.1.1 fgsl_multifit_linear_workspace

```
type(c_ptr) fgsl::fgsl_multifit_linear_workspace::fgsl_multifit_linear_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.75 fgsl::fgsl_multifit_nlinear_fdf Type Reference

Public Attributes

- `type(c_ptr) fgsl_multifit_nlinear_fdf = c_null_ptr`

48.75.1 Member Data Documentation

48.75.1.1 fgsl_multifit_nlinear_fdf

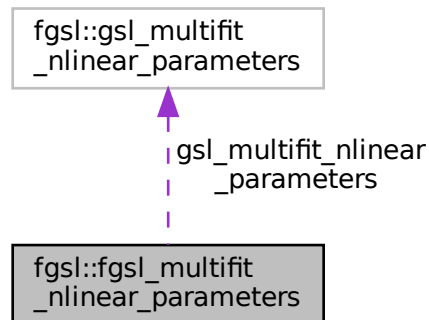
```
type(c_ptr) fgsl::fgsl_multifit_nlinear_fdf::fgsl_multifit_nlinear_fdf = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.76 fgsl::fgsl_multifit_nlinear_parameters Type Reference

Collaboration diagram for fgsl::fgsl_multifit_nlinear_parameters:



Public Attributes

- type(gsl_multifit_nlinear_parameters) [gsl_multifit_nlinear_parameters](#)

48.76.1 Member Data Documentation

48.76.1.1 gsl_multifit_nlinear_parameters

```
type(gsl_multifit_nlinear_parameters) fgsl::fgsl_multifit_nlinear_parameters::gsl_multifit_nlinear_parameters
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.77 fgsl_multifit_nlinear_type Interface Reference

Public Member Functions

- [fgsl_multifit_nlinear_setup](#)

48.77.1 Member Function/Subroutine Documentation

48.77.1.1 fgsl_multifit_nlinear_setup()

```
fgsl_multifit_nlinear_type::fgsl_multifit_nlinear_setup
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.78 fgsl::fgsl_multifit_nlinear_type Type Reference

Public Attributes

- `type(c_ptr)` [gsl_multifit_nlinear_type](#) = `c_null_ptr`

48.78.1 Member Data Documentation

48.78.1.1 gsl_multifit_nlinear_type

```
type(c_ptr) fgsl::fgsl_multifit_nlinear_type::gsl_multifit_nlinear_type = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.79 fgsl::fgsl_multifit_nlinear_workspace Type Reference

Public Attributes

- `type(c_ptr)` [gsl_multifit_nlinear_workspace](#) = `c_null_ptr`

48.79.1 Member Data Documentation

48.79.1.1 gsl_multifit_nlinear_workspace

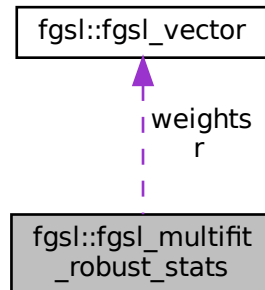
```
type(c_ptr) fgsl::fgsl_multifit_nlinear_workspace::gsl_multifit_nlinear_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.80 fgsl::fgsl_multifit_robust_stats Type Reference

Collaboration diagram for fgsl::fgsl_multifit_robust_stats:



Public Attributes

- `real(fgsl_double) sigma_ols`
- `real(fgsl_double) sigma_mad`
- `real(fgsl_double) sigma_rob`
- `real(fgsl_double) sigma`
- `real(fgsl_double) rsq`
- `real(fgsl_double) adj_rsq`
- `real(fgsl_double) rmse`
- `real(fgsl_double) sse`
- `real(fgsl_double) dof`
- `real(fgsl_double) numit`
- `type(fgsl_vector) weights`
- `type(fgsl_vector) r`

48.80.1 Member Data Documentation

48.80.1.1 adj_rsq

```
real(fgsl_double) fgsl::fgsl_multifit_robust_stats::adj_rsq
```

48.80.1.2 dof

```
real(fgsl_double) fgsl::fgsl_multifit_robust_stats::dof
```

48.80.1.3 numit

`real(fgsl_double) fgsl::fgsl_multifit_robust_stats::numit`

48.80.1.4 r

`type(fgsl_vector) fgsl::fgsl_multifit_robust_stats::r`

48.80.1.5 rmse

`real(fgsl_double) fgsl::fgsl_multifit_robust_stats::rmse`

48.80.1.6 rsq

`real(fgsl_double) fgsl::fgsl_multifit_robust_stats::rsq`

48.80.1.7 sigma

`real(fgsl_double) fgsl::fgsl_multifit_robust_stats::sigma`

48.80.1.8 sigma_mad

`real(fgsl_double) fgsl::fgsl_multifit_robust_stats::sigma_mad`

48.80.1.9 sigma_ols

`real(fgsl_double) fgsl::fgsl_multifit_robust_stats::sigma_ols`

48.80.1.10 sigma_rob

`real(fgsl_double) fgsl::fgsl_multifit_robust_stats::sigma_rob`

48.80.1.11 sse

```
real(fgsl_double) fgsl::fgsl_multifit_robust_stats::sse
```

48.80.1.12 weights

```
type(fgsl_vector) fgsl::fgsl_multifit_robust_stats::weights
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.81 fgsl::fgsl_multifit_robust_type Type Reference

Public Attributes

- integer(fgsl_int) `which` = 0

48.81.1 Member Data Documentation

48.81.1.1 which

```
integer(fgsl_int) fgsl::fgsl_multifit_robust_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.82 fgsl::fgsl_multifit_robust_workspace Type Reference

Public Attributes

- type(c_ptr) `gsl_multifit_robust_workspace`

48.82.1 Member Data Documentation

48.82.1.1 `gsl_multifit_robust_workspace`

```
type(c_ptr) fgsl::fgsl_multifit_robust_workspace::gsl_multifit_robust_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.83 `fgsl::fgsl_multilarge_linear_type` Type Reference

Public Attributes

- `integer(fgsl_int) which = 0`

48.83.1 Member Data Documentation

48.83.1.1 `which`

```
integer(fgsl\_int) fgsl::fgsl_multilarge_linear_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.84 `fgsl::fgsl_multilarge_linear_workspace` Type Reference

Public Attributes

- `type(c_ptr) gsl_multilarge_linear_workspace`

48.84.1 Member Data Documentation

48.84.1.1 `gsl_multilarge_linear_workspace`

```
type(c_ptr) fgsl::fgsl_multilarge_linear_workspace::gsl_multilarge_linear_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.85 fgsl::fgsl_multilarge_nlinear_fdf Type Reference

Public Attributes

- `type(c_ptr)` [fgsl_multilarge_nlinear_fdf](#) = `c_null_ptr`

48.85.1 Member Data Documentation

48.85.1.1 fgsl_multilarge_nlinear_fdf

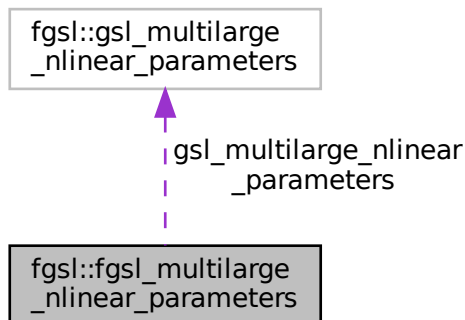
```
type(c_ptr) fgsl::fgsl_multilarge_nlinear_fdf::fgsl_multilarge_nlinear_fdf = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.86 fgsl::fgsl_multilarge_nlinear_parameters Type Reference

Collaboration diagram for fgsl::fgsl_multilarge_nlinear_parameters:



Public Attributes

- `type(gsl_multilarge_nlinear_parameters)` [fgsl_multilarge_nlinear_parameters](#)

48.86.1 Member Data Documentation

48.86.1.1 `gsl_multilarge_nlinear_parameters`

```
type(gsl_multilarge_nlinear_parameters) fgsl::fgsl_multilarge_nlinear_parameters::gsl_multilarge↵
_nlinear_parameters
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.87 `fgsl_multilarge_nlinear_type` Interface Reference

Public Member Functions

- [fgsl_multilarge_nlinear_setup](#)

48.87.1 Member Function/Subroutine Documentation

48.87.1.1 `fgsl_multilarge_nlinear_setup()`

```
fgsl_multilarge_nlinear_type::fgsl_multilarge_nlinear_setup
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.88 `fgsl::fgsl_multilarge_nlinear_type` Type Reference

Public Attributes

- `type(c_ptr)` [gsl_multilarge_nlinear_type](#) = `c_null_ptr`

48.88.1 Member Data Documentation

48.88.1.1 `gsl_multilarge_nlinear_type`

```
type(c_ptr) fgsl::fgsl_multilarge_nlinear_type::gsl_multilarge_nlinear_type = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.89 fgsl::fgsl_multilarge_nlinear_workspace Type Reference

Public Attributes

- `type(c_ptr) fgsl_multilarge_nlinear_workspace = c_null_ptr`

48.89.1 Member Data Documentation

48.89.1.1 [fgsl_multilarge_nlinear_workspace](#)

```
type(c_ptr) fgsl::fgsl_multilarge_nlinear_workspace::fgsl_multilarge_nlinear_workspace = c_↵  
null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.90 fgsl::fgsl_multimin_fdfminimizer Type Reference

Public Attributes

- `type(c_ptr) fgsl_multimin_fdfminimizer = c_null_ptr`

48.90.1 Member Data Documentation

48.90.1.1 [fgsl_multimin_fdfminimizer](#)

```
type(c_ptr) fgsl::fgsl_multimin_fdfminimizer::fgsl_multimin_fdfminimizer = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.91 fgsl::fgsl_multimin_fdfminimizer_type Type Reference

Public Attributes

- `integer(c_int) which = 0`

48.91.1 Member Data Documentation

48.91.1.1 which

```
integer(c_int) fgsl::fgsl_multimin_fdfminimizer_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.92 fgsl::fgsl_multimin_fminimizer Type Reference

Public Attributes

- type(c_ptr) [gsl_multimin_fminimizer](#) = c_null_ptr

48.92.1 Member Data Documentation

48.92.1.1 gsl_multimin_fminimizer

```
type(c_ptr) fgsl::fgsl_multimin_fminimizer::gsl_multimin_fminimizer = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.93 fgsl::fgsl_multimin_fminimizer_type Type Reference

Public Attributes

- integer(c_int) [which](#) = 0

48.93.1 Member Data Documentation

48.93.1.1 which

```
integer(c_int) fgsl::fgsl_multimin_fminimizer_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.94 fgsl::fgsl_multimin_function Type Reference

Public Attributes

- type(c_ptr) [gsl_multimin_function](#) = c_null_ptr

48.94.1 Member Data Documentation

48.94.1.1 gsl_multimin_function

```
type(c_ptr) fgsl::fgsl_multimin_function::gsl_multimin_function = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.95 fgsl::fgsl_multimin_function_fdf Type Reference

Public Attributes

- type(c_ptr) [gsl_multimin_function_fdf](#) = c_null_ptr

48.95.1 Member Data Documentation

48.95.1.1 gsl_multimin_function_fdf

```
type(c_ptr) fgsl::fgsl_multimin_function_fdf::gsl_multimin_function_fdf = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.96 fgsl::fgsl_multiroot_fdfsolver Type Reference

Public Attributes

- `type(c_ptr) fgsl_multiroot_fdfsolver = c_null_ptr`

48.96.1 Member Data Documentation

48.96.1.1 fgsl_multiroot_fdfsolver

```
type(c_ptr) fgsl::fgsl_multiroot_fdfsolver::fgsl_multiroot_fdfsolver = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.97 fgsl::fgsl_multiroot_fdfsolver_type Type Reference

Public Attributes

- `integer(c_int) which = 0`

48.97.1 Member Data Documentation

48.97.1.1 which

```
integer(c_int) fgsl::fgsl_multiroot_fdfsolver_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.98 fgsl::fgsl_multiroot_fsolver Type Reference

Public Attributes

- `type(c_ptr) fgsl_multiroot_fsolver = c_null_ptr`

48.98.1 Member Data Documentation

48.98.1.1 gsl_multiroot_fsolver

```
type(c_ptr) fgsl::fgsl_multiroot_fsolver::gsl_multiroot_fsolver = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.99 fgsl::fgsl_multiroot_fsolver_type Type Reference

Public Attributes

- integer(c_int) [which](#) = 0

48.99.1 Member Data Documentation

48.99.1.1 which

```
integer(c_int) fgsl::fgsl_multiroot_fsolver_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.100 fgsl::fgsl_multiroot_function Type Reference

Public Attributes

- type(c_ptr) [gsl_multiroot_function](#) = c_null_ptr

48.100.1 Member Data Documentation

48.100.1.1 `gsl_multiroot_function`

```
type(c_ptr) fgsl::fgsl_multiroot_function::gsl_multiroot_function = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.101 `fgsl::fgsl_multiroot_function_fdf` Type Reference

Public Attributes

- `type(c_ptr) gsl_multiroot_function_fdf = c_null_ptr`

48.101.1 Member Data Documentation

48.101.1.1 `gsl_multiroot_function_fdf`

```
type(c_ptr) fgsl::fgsl_multiroot_function_fdf::gsl_multiroot_function_fdf = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.102 `fgsl::fgsl_multiset` Type Reference

Public Attributes

- `type(c_ptr) gsl_multiset = c_null_ptr`

48.102.1 Member Data Documentation

48.102.1.1 `gsl_multiset`

```
type(c_ptr) fgsl::fgsl_multiset::gsl_multiset = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.103 fgsl::fgsl_nlinear_callback Interface Reference

The documentation for this interface was generated from the following file:

- [fgsl.F90](#)

48.104 fgsl::fgsl_ntuple Type Reference

Public Attributes

- `type(c_ptr) gsl_ntuple = c_null_ptr`

48.104.1 Member Data Documentation

48.104.1.1 [gsl_ntuple](#)

```
type(c_ptr) fgsl::fgsl_ntuple::gsl_ntuple = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.105 fgsl::fgsl_ntuple_select_fn Type Reference

Public Attributes

- `type(c_ptr) gsl_ntuple_select_fn = c_null_ptr`

48.105.1 Member Data Documentation

48.105.1.1 [gsl_ntuple_select_fn](#)

```
type(c_ptr) fgsl::fgsl_ntuple_select_fn::gsl_ntuple_select_fn = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.106 fgsl::fgsl_ntuple_value_fn Type Reference

Public Attributes

- `type(c_ptr) fgsl_ntuple_value_fn = c_null_ptr`

48.106.1 Member Data Documentation

48.106.1.1 fgsl_ntuple_value_fn

```
type(c_ptr) fgsl::fgsl_ntuple_value_fn::fgsl_ntuple_value_fn = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.107 fgsl_obj_c_ptr Interface Reference

Public Member Functions

- [fgsl_rng_c_ptr](#)
- [fgsl_vector_c_ptr](#)
- [fgsl_matrix_c_ptr](#)

48.107.1 Member Function/Subroutine Documentation

48.107.1.1 fgsl_matrix_c_ptr()

```
fgsl_obj_c_ptr::fgsl_matrix_c_ptr
```

48.107.1.2 fgsl_rng_c_ptr()

```
fgsl_obj_c_ptr::fgsl_rng_c_ptr
```

48.107.1.3 fgsl_vector_c_ptr()

```
fgsl_obj_c_ptr::fgsl_vector_c_ptr
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.108 fgsl::fgsl_odeiv2_control Type Reference

Public Attributes

- `type(c_ptr)` [gsl_odeiv2_control](#) = `c_null_ptr`

48.108.1 Member Data Documentation

48.108.1.1 gsl_odeiv2_control

```
type(c_ptr) fgsl::fgsl_odeiv2_control::gsl_odeiv2_control = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.109 fgsl::fgsl_odeiv2_control_type Type Reference

Public Attributes

- `type(c_ptr)` [gsl_odeiv2_control_type](#) = `c_null_ptr`

48.109.1 Member Data Documentation

48.109.1.1 gsl_odeiv2_control_type

```
type(c_ptr) fgsl::fgsl_odeiv2_control_type::gsl_odeiv2_control_type = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.110 fgsl::fgsl_odeiv2_driver Type Reference

Public Attributes

- `type(c_ptr) fgsl_odeiv2_driver = c_null_ptr`

48.110.1 Member Data Documentation

48.110.1.1 fgsl_odeiv2_driver

```
type(c_ptr) fgsl::fgsl_odeiv2_driver::fgsl_odeiv2_driver = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.111 fgsl::fgsl_odeiv2_evolve Type Reference

Public Attributes

- `type(c_ptr) fgsl_odeiv2_evolve`

48.111.1 Member Data Documentation

48.111.1.1 fgsl_odeiv2_evolve

```
type(c_ptr) fgsl::fgsl_odeiv2_evolve::fgsl_odeiv2_evolve
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.112 fgsl::fgsl_odeiv2_step Type Reference

Public Attributes

- `type(c_ptr) fgsl_odeiv2_step = c_null_ptr`

48.112.1 Member Data Documentation

48.112.1.1 gsl_odeiv2_step

```
type(c_ptr) fgsl::fgsl_odeiv2_step::gsl_odeiv2_step = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.113 fgsl::fgsl_odeiv2_step_type Type Reference

Public Attributes

- integer(c_int) [which](#) = 0

48.113.1 Member Data Documentation

48.113.1.1 which

```
integer(c_int) fgsl::fgsl_odeiv2_step_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.114 fgsl::fgsl_odeiv2_system Type Reference

Public Attributes

- type(c_ptr) [gsl_odeiv2_system](#) = c_null_ptr

48.114.1 Member Data Documentation

48.114.1.1 `gsl_odeiv2_system`

```
type(c_ptr) fgsl::fgsl_odeiv2_system::gsl_odeiv2_system = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.115 `fgsl::fgsl_odeiv_control` Type Reference

Public Attributes

- `type(c_ptr) gsl_odeiv_control = c_null_ptr`

48.115.1 Member Data Documentation

48.115.1.1 `gsl_odeiv_control`

```
type(c_ptr) fgsl::fgsl_odeiv_control::gsl_odeiv_control = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.116 `fgsl::fgsl_odeiv_control_type` Type Reference

Public Attributes

- `type(c_ptr) gsl_odeiv_control_type = c_null_ptr`

48.116.1 Member Data Documentation

48.116.1.1 `gsl_odeiv_control_type`

```
type(c_ptr) fgsl::fgsl_odeiv_control_type::gsl_odeiv_control_type = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.117 fgsl::fgsl_odeiv_evolve Type Reference

Public Attributes

- `type(c_ptr)` [fgsl_odeiv_evolve](#)

48.117.1 Member Data Documentation

48.117.1.1 gsl_odeiv_evolve

```
type(c_ptr) fgsl::fgsl_odeiv_evolve::gsl_odeiv_evolve
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.118 fgsl::fgsl_odeiv_step Type Reference

Public Attributes

- `type(c_ptr)` [gsl_odeiv_step](#) = `c_null_ptr`

48.118.1 Member Data Documentation

48.118.1.1 gsl_odeiv_step

```
type(c_ptr) fgsl::fgsl_odeiv_step::gsl_odeiv_step = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.119 fgsl::fgsl_odeiv_step_type Type Reference

Public Attributes

- `integer(c_int)` [which](#) = 0

48.119.1 Member Data Documentation

48.119.1.1 which

```
integer(c_int) fgsl::fgsl_odeiv_step_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.120 fgsl::fgsl_odeiv_system Type Reference

Public Attributes

- `type(c_ptr) gsl_odeiv_system = c_null_ptr`

48.120.1 Member Data Documentation

48.120.1.1 gsl_odeiv_system

```
type(c_ptr) fgsl::fgsl_odeiv_system::gsl_odeiv_system = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.121 fgsl::fgsl_permutation Type Reference

Public Attributes

- `type(c_ptr) gsl_permutation = c_null_ptr`

48.121.1 Member Data Documentation

48.121.1.1 gsl_permutation

```
type(c_ptr) fgsl::fgsl_permutation::gsl_permutation = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.122 fgsl_permute Interface Reference

Public Member Functions

- [fgsl_permute](#)
- [fgsl_permute_long](#)

48.122.1 Constructor & Destructor Documentation

48.122.1.1 fgsl_permute()

```
fgsl_permute::fgsl_permute
```

48.122.2 Member Function/Subroutine Documentation

48.122.2.1 fgsl_permute_long()

```
fgsl_permute::fgsl_permute_long
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.123 fgsl_permute_inverse Interface Reference

Public Member Functions

- [fgsl_permute_inverse](#)
- [fgsl_permute_long_inverse](#)

48.123.1 Constructor & Destructor Documentation

48.123.1.1 fgsl_permute_inverse()

```
fgsl_permute_inverse::fgsl_permute_inverse
```

48.123.2 Member Function/Subroutine Documentation

48.123.2.1 fgsl_permute_long_inverse()

```
fgsl_permute_inverse::fgsl_permute_long_inverse
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.124 fgsl::fgsl_poly_complex_workspace Type Reference

Public Attributes

- `type(c_ptr)` [gsl_poly_complex_workspace](#)

48.124.1 Member Data Documentation

48.124.1.1 gsl_poly_complex_workspace

```
type(c_ptr) fgsl::fgsl_poly_complex_workspace::gsl_poly_complex_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.125 fgsl::fgsl_qrng Type Reference

Public Attributes

- `type(c_ptr)` [gsl_qrng](#)

48.125.1 Member Data Documentation

48.125.1.1 gsl_qrng

```
type(c_ptr) fgsl::fgsl_qrng::gsl_qrng
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.126 fgsl::fgsl_qrng_type Type Reference

Public Attributes

- integer([fgsl_int](#)) `type` = 0

48.126.1 Member Data Documentation

48.126.1.1 type

```
integer(fgsl\_int) fgsl::fgsl_qrng_type::type = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.127 fgsl::fgsl_ran_discrete_t Type Reference

Public Attributes

- type(c_ptr) [gsl_ran_discrete_t](#)

48.127.1 Member Data Documentation

48.127.1.1 `gsl_ran_discrete_t`

```
type(c_ptr) fgsl::fgsl_ran_discrete_t::gsl_ran_discrete_t
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.128 `fgsl_ran_shuffle` Interface Reference

Public Member Functions

- [fgsl_ran_shuffle](#)
- [fgsl_ran_shuffle_double](#)
- [fgsl_ran_shuffle_size_t](#)

48.128.1 Constructor & Destructor Documentation

48.128.1.1 `fgsl_ran_shuffle()`

```
fgsl_ran_shuffle::fgsl_ran_shuffle
```

48.128.2 Member Function/Subroutine Documentation

48.128.2.1 `fgsl_ran_shuffle_double()`

```
fgsl_ran_shuffle::fgsl_ran_shuffle_double
```

48.128.2.2 `fgsl_ran_shuffle_size_t()`

```
fgsl_ran_shuffle::fgsl_ran_shuffle_size_t
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.129 fgsl::fgsl_rng Type Reference

Public Attributes

- `type(c_ptr) fgsl_rng = c_null_ptr`

48.129.1 Member Data Documentation

48.129.1.1 [fgsl_rng](#)

```
type(c_ptr) fgsl::fgsl_rng::fgsl_rng = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.130 fgsl::fgsl_rng_type Type Reference

Public Attributes

- `type(c_ptr) fgsl_rng_type = c_null_ptr`
- `integer(fgsl_int) type = 0`

48.130.1 Member Data Documentation

48.130.1.1 [fgsl_rng_type](#)

```
type(c_ptr) fgsl::fgsl_rng_type::fgsl_rng_type = c_null_ptr
```

48.130.1.2 [type](#)

```
integer(fgsl\_int) fgsl::fgsl_rng_type::type = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.131 fgsl::fgsl_root_fdfsolver Type Reference

Public Attributes

- `type(c_ptr) fgsl_root_fdfsolver = c_null_ptr`

48.131.1 Member Data Documentation

48.131.1.1 fgsl_root_fdfsolver

```
type(c_ptr) fgsl::fgsl_root_fdfsolver::fgsl_root_fdfsolver = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.132 fgsl::fgsl_root_fdfsolver_type Type Reference

Public Attributes

- `integer(c_int) which = 0`

48.132.1 Member Data Documentation

48.132.1.1 which

```
integer(c_int) fgsl::fgsl_root_fdfsolver_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.133 fgsl::fgsl_root_fsolver Type Reference

Public Attributes

- `type(c_ptr) fgsl_root_fsolver = c_null_ptr`

48.133.1 Member Data Documentation

48.133.1.1 gsl_root_fsolver

```
type(c_ptr) fgsl::fgsl_root_fsolver::gsl_root_fsolver = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.134 fgsl::fgsl_root_fsolver_type Type Reference

Public Attributes

- integer(c_int) [which](#) = 0

48.134.1 Member Data Documentation

48.134.1.1 which

```
integer(c_int) fgsl::fgsl_root_fsolver_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.135 fgsl::fgsl_rstat_quantile_workspace Type Reference

Public Attributes

- type(c_ptr) [gsl_rstat_quantile_workspace](#)

48.135.1 Member Data Documentation

48.135.1.1 `gsl_rstat_quantile_workspace`

```
type(c_ptr) fgsl::fgsl_rstat_quantile_workspace::gsl_rstat_quantile_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.136 `fgsl::fgsl_rstat_workspace` Type Reference

Public Attributes

- `type(c_ptr)` [gsl_rstat_workspace](#)

48.136.1 Member Data Documentation

48.136.1.1 `gsl_rstat_workspace`

```
type(c_ptr) fgsl::fgsl_rstat_workspace::gsl_rstat_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.137 `fgsl::fgsl_sf_legendre_t` Type Reference

Public Attributes

- `integer(c_int)` [gsl_sf_legendre_t](#) = 0

48.137.1 Member Data Documentation

48.137.1.1 `gsl_sf_legendre_t`

```
integer(c_int) fgsl::fgsl_sf_legendre_t::gsl_sf_legendre_t = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.138 fgsl::fgsl_sf_mathieu_workspace Type Reference

Public Attributes

- `type(c_ptr)` [fgsl_sf_mathieu_workspace](#)

48.138.1 Member Data Documentation

48.138.1.1 fgsl_sf_mathieu_workspace

```
type(c_ptr) fgsl::fgsl_sf_mathieu_workspace::fgsl_sf_mathieu_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.139 fgsl::fgsl_sf_result Type Reference

Public Attributes

- `real(fgsl_double)` [val](#)
- `real(fgsl_double)` [err](#)

48.139.1 Member Data Documentation

48.139.1.1 err

```
real(fgsl_double) fgsl::fgsl_sf_result::err
```

48.139.1.2 val

```
real(fgsl_double) fgsl::fgsl_sf_result::val
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.140 fgsl::fgsl_sf_result_e10 Type Reference

Public Attributes

- `real(fgsl_double) val`
- `real(fgsl_double) err`
- `integer(fgsl_int) e10`

48.140.1 Member Data Documentation

48.140.1.1 e10

```
integer(fgsl_int) fgsl::fgsl_sf_result_e10::e10
```

48.140.1.2 err

```
real(fgsl_double) fgsl::fgsl_sf_result_e10::err
```

48.140.1.3 val

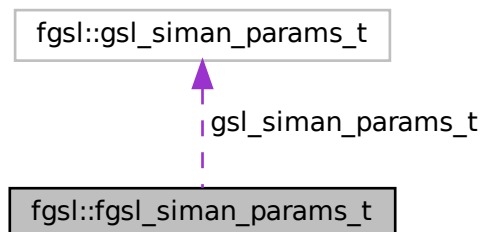
```
real(fgsl_double) fgsl::fgsl_sf_result_e10::val
```

The documentation for this type was generated from the following file:

- `fgsl.F90`

48.141 fgsl::fgsl_siman_params_t Type Reference

Collaboration diagram for `fgsl::fgsl_siman_params_t`:



Public Attributes

- `type(gsl_siman_params_t)`, pointer [gsl_siman_params_t](#) => `null()`

48.141.1 Member Data Documentation

48.141.1.1 `gsl_siman_params_t`

```
type(gsl_siman_params_t), pointer fgsl::fgsl_siman_params_t::gsl_siman_params_t => null()
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.142 fgsl_sizeof Interface Reference

Public Member Functions

- [fgsl_sizeof_double](#)
- [fgsl_sizeof_float](#)
- [fgsl_sizeof_int](#)
- [fgsl_sizeof_size_t](#)
- [fgsl_sizeof_char](#)
- [fgsl_sizeof_vector](#)
- [fgsl_sizeof_matrix](#)
- [fgsl_sizeof_vector_complex](#)
- [fgsl_sizeof_matrix_complex](#)
- [fgsl_sizeof_interp](#)
- [fgsl_sizeof_permutation](#)
- [fgsl_sizeof_combination](#)
- [fgsl_sizeof_multiset](#)
- [fgsl_sizeof_integration_workspace](#)
- [fgsl_sizeof_integration_qaws_table](#)
- [fgsl_sizeof_integration_qawo_table](#)
- [fgsl_sizeof_wavelet](#)
- [fgsl_sizeof_wavelet_workspace](#)

48.142.1 Member Function/Subroutine Documentation

48.142.1.1 `fgsl_sizeof_char()`

```
fgsl_sizeof::fgsl_sizeof_char
```

48.142.1.2 fgsl_sizeof_combination()

```
fgsl_sizeof::fgsl_sizeof_combination
```

48.142.1.3 fgsl_sizeof_double()

```
fgsl_sizeof::fgsl_sizeof_double
```

48.142.1.4 fgsl_sizeof_float()

```
fgsl_sizeof::fgsl_sizeof_float
```

48.142.1.5 fgsl_sizeof_int()

```
fgsl_sizeof::fgsl_sizeof_int
```

48.142.1.6 fgsl_sizeof_integration_qawo_table()

```
fgsl_sizeof::fgsl_sizeof_integration_qawo_table
```

48.142.1.7 fgsl_sizeof_integration_qaws_table()

```
fgsl_sizeof::fgsl_sizeof_integration_qaws_table
```

48.142.1.8 fgsl_sizeof_integration_workspace()

```
fgsl_sizeof::fgsl_sizeof_integration_workspace
```

48.142.1.9 fgsl_sizeof_interp()

```
fgsl_sizeof::fgsl_sizeof_interp
```

48.142.1.10 fgsl_sizeof_matrix()

```
fgsl_sizeof::fgsl_sizeof_matrix
```

48.142.1.11 fgsl_sizeof_matrix_complex()

```
fgsl_sizeof::fgsl_sizeof_matrix_complex
```

48.142.1.12 fgsl_sizeof_multiset()

```
fgsl_sizeof::fgsl_sizeof_multiset
```

48.142.1.13 fgsl_sizeof_permutation()

```
fgsl_sizeof::fgsl_sizeof_permutation
```

48.142.1.14 fgsl_sizeof_size_t()

```
fgsl_sizeof::fgsl_sizeof_size_t
```

48.142.1.15 fgsl_sizeof_vector()

```
fgsl_sizeof::fgsl_sizeof_vector
```

48.142.1.16 fgsl_sizeof_vector_complex()

```
fgsl_sizeof::fgsl_sizeof_vector_complex
```

48.142.1.17 fgsl_sizeof_wavelet()

```
fgsl_sizeof::fgsl_sizeof_wavelet
```

48.142.1.18 fgsl_sizeof_wavelet_workspace()

fgsl_sizeof::fgsl_sizeof_wavelet_workspace

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.143 fgsl_sort Interface Reference

Public Member Functions

- [fgsl_sort_double](#)
- [fgsl_sort2_double](#)
- [fgsl_sort_long](#)
- [fgsl_sort_vector](#)
- [fgsl_sort_vector2](#)

48.143.1 Member Function/Subroutine Documentation

48.143.1.1 fgsl_sort2_double()

fgsl_sort::fgsl_sort2_double

48.143.1.2 fgsl_sort_double()

fgsl_sort::fgsl_sort_double

48.143.1.3 fgsl_sort_long()

fgsl_sort::fgsl_sort_long

48.143.1.4 fgsl_sort_vector()

fgsl_sort::fgsl_sort_vector

48.143.1.5 fgsl_sort_vector2()

```
fgsl_sort::fgsl_sort_vector2
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.144 fgsl_sort_index Interface Reference

Public Member Functions

- [fgsl_sort_double_index](#)
- [fgsl_sort_long_index](#)
- [fgsl_sort_vector_index](#)

48.144.1 Member Function/Subroutine Documentation

48.144.1.1 fgsl_sort_double_index()

```
fgsl_sort_index::fgsl_sort_double_index
```

48.144.1.2 fgsl_sort_long_index()

```
fgsl_sort_index::fgsl_sort_long_index
```

48.144.1.3 fgsl_sort_vector_index()

```
fgsl_sort_index::fgsl_sort_vector_index
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.145 fgsl_sort_largest Interface Reference

Public Member Functions

- [fgsl_sort_double_largest](#)
- [fgsl_sort_long_largest](#)
- [fgsl_sort_vector_largest](#)

48.145.1 Member Function/Subroutine Documentation

48.145.1.1 fgsl_sort_double_largest()

```
fgsl_sort_largest::fgsl_sort_double_largest
```

48.145.1.2 fgsl_sort_long_largest()

```
fgsl_sort_largest::fgsl_sort_long_largest
```

48.145.1.3 fgsl_sort_vector_largest()

```
fgsl_sort_largest::fgsl_sort_vector_largest
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.146 fgsl_sort_largest_index Interface Reference

Public Member Functions

- [fgsl_sort_double_largest_index](#)
- [fgsl_sort_long_largest_index](#)
- [fgsl_sort_vector_largest_index](#)

48.146.1 Member Function/Subroutine Documentation

48.146.1.1 fgsl_sort_double_largest_index()

```
fgsl_sort_largest_index::fgsl_sort_double_largest_index
```

48.146.1.2 fgsl_sort_long_largest_index()

```
fgsl_sort_largest_index::fgsl_sort_long_largest_index
```

48.146.1.3 fgsl_sort_vector_largest_index()

```
fgsl_sort_largest_index::fgsl_sort_vector_largest_index
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.147 fgsl_sort_smallest Interface Reference

Public Member Functions

- [fgsl_sort_double_smallest](#)
- [fgsl_sort_long_smallest](#)
- [fgsl_sort_vector_smallest](#)

48.147.1 Member Function/Subroutine Documentation

48.147.1.1 fgsl_sort_double_smallest()

```
fgsl_sort_smallest::fgsl_sort_double_smallest
```

48.147.1.2 fgsl_sort_long_smallest()

```
fgsl_sort_smallest::fgsl_sort_long_smallest
```

48.147.1.3 fgsl_sort_vector_smallest()

```
fgsl_sort_smallest::fgsl_sort_vector_smallest
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.148 fgsl_sort_smallest_index Interface Reference

Public Member Functions

- [fgsl_sort_double_smallest_index](#)
- [fgsl_sort_long_smallest_index](#)
- [fgsl_sort_vector_smallest_index](#)

48.148.1 Member Function/Subroutine Documentation

48.148.1.1 fgsl_sort_double_smallest_index()

`fgsl_sort_smallest_index::fgsl_sort_double_smallest_index`

48.148.1.2 fgsl_sort_long_smallest_index()

`fgsl_sort_smallest_index::fgsl_sort_long_smallest_index`

48.148.1.3 fgsl_sort_vector_smallest_index()

`fgsl_sort_smallest_index::fgsl_sort_vector_smallest_index`

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.149 fgsl::fgsl_splinalg_itersolve Type Reference

Public Attributes

- `type(c_ptr)` [gsl_splinalg_itersolve](#)

48.149.1 Member Data Documentation

48.149.1.1 gsl_splinalg_itersolve

```
type(c_ptr) fgsl::fgsl_splinalg_itersolve::gsl_splinalg_itersolve
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.150 fgsl::fgsl_splinalg_itersolve_type Type Reference

Public Attributes

- integer(c_int) [which](#) = 0

48.150.1 Member Data Documentation

48.150.1.1 which

```
integer(c_int) fgsl::fgsl_splinalg_itersolve_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.151 fgsl::fgsl_spline Type Reference

Public Attributes

- type(c_ptr) [gsl_spline](#) = c_null_ptr

48.151.1 Member Data Documentation

48.151.1.1 gsl_spline

```
type(c_ptr) fgsl::fgsl_spline::gsl_spline = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.152 fgsl::fgsl_spline2d Type Reference

Public Attributes

- `type(c_ptr) fgsl_spline2d = c_null_ptr`

48.152.1 Member Data Documentation

48.152.1.1 fgsl_spline2d

```
type(c_ptr) fgsl::fgsl_spline2d::fgsl_spline2d = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.153 fgsl::fgsl_spmatrix Type Reference

Public Attributes

- `type(c_ptr) fgsl_spmatrix = c_null_ptr`

48.153.1 Member Data Documentation

48.153.1.1 fgsl_spmatrix

```
type(c_ptr) fgsl::fgsl_spmatrix::fgsl_spmatrix = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.154 fgsl::fgsl_sum_levin_u_workspace Type Reference

Public Attributes

- `type(c_ptr) fgsl_sum_levin_u_workspace = c_null_ptr`

48.154.1 Member Data Documentation

48.154.1.1 gsl_sum_levin_u_workspace

```
type(c_ptr) fgsl::fgsl_sum_levin_u_workspace::gsl_sum_levin_u_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.155 fgsl::fgsl_sum_levin_utrunc_workspace Type Reference

Public Attributes

- type(c_ptr) [gsl_sum_levin_utrunc_workspace](#) = c_null_ptr

48.155.1 Member Data Documentation

48.155.1.1 gsl_sum_levin_utrunc_workspace

```
type(c_ptr) fgsl::fgsl_sum_levin_utrunc_workspace::gsl_sum_levin_utrunc_workspace = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.156 fgsl::fgsl_vector Type Reference

Public Attributes

- type(c_ptr) [gsl_vector](#) = c_null_ptr

48.156.1 Member Data Documentation

48.156.1.1 `gsl_vector`

```
type(c_ptr) fgsl::fgsl_vector::gsl_vector = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.157 `fgsl_vector_align` Interface Reference

Public Member Functions

- [fgsl_vector_align](#)
- [fgsl_vector_complex_align](#)
- [fgsl_vector_pointer_align](#)
- [fgsl_vector_complex_pointer_align](#)

48.157.1 Constructor & Destructor Documentation

48.157.1.1 `fgsl_vector_align()`

```
fgsl_vector_align::fgsl_vector_align
```

48.157.2 Member Function/Subroutine Documentation

48.157.2.1 `fgsl_vector_complex_align()`

```
fgsl_vector_align::fgsl_vector_complex_align
```

48.157.2.2 `fgsl_vector_complex_pointer_align()`

```
fgsl_vector_align::fgsl_vector_complex_pointer_align
```


48.157.2.3 fgsl_vector_pointer_align()

```
fgsl_vector_align::fgsl_vector_pointer_align
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.158 fgsl::fgsl_vector_complex Type Reference

Public Attributes

- `type(c_ptr) fgsl_vector_complex = c_null_ptr`

48.158.1 Member Data Documentation

48.158.1.1 fgsl_vector_complex

```
type(c_ptr) fgsl::fgsl_vector_complex::fgsl_vector_complex = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.159 fgsl_vector_free Interface Reference

Public Member Functions

- [fgsl_vector_free](#)
- [fgsl_vector_int_free](#)
- [fgsl_vector_complex_free](#)

48.159.1 Constructor & Destructor Documentation

48.159.1.1 fgsl_vector_free()

```
fgsl_vector_free::fgsl_vector_free
```

48.159.2 Member Function/Subroutine Documentation

48.159.2.1 fgsl_vector_complex_free()

fgsl_vector_free::fgsl_vector_complex_free

48.159.2.2 fgsl_vector_int_free()

fgsl_vector_free::fgsl_vector_int_free

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.160 fgsl_vector_init Interface Reference

Public Member Functions

- [fgsl_vector_init](#)
- [fgsl_vector_int_init](#)
- [fgsl_vector_init_legacy](#)
- [fgsl_vector_complex_init](#)
- [fgsl_vector_complex_init_legacy](#)

48.160.1 Constructor & Destructor Documentation

48.160.1.1 fgsl_vector_init()

fgsl_vector_init::fgsl_vector_init

48.160.2 Member Function/Subroutine Documentation

48.160.2.1 fgsl_vector_complex_init()

fgsl_vector_init::fgsl_vector_complex_init

48.160.2.2 fgsl_vector_complex_init_legacy()

```
fgsl_vector_init::fgsl_vector_complex_init_legacy
```

48.160.2.3 fgsl_vector_init_legacy()

```
fgsl_vector_init::fgsl_vector_init_legacy
```

48.160.2.4 fgsl_vector_int_init()

```
fgsl_vector_init::fgsl_vector_int_init
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.161 fgsl::fgsl_vector_int Type Reference

Public Attributes

- `type(c_ptr) gsl_vector_int = c_null_ptr`

48.161.1 Member Data Documentation

48.161.1.1 gsl_vector_int

```
type(c_ptr) fgsl::fgsl_vector_int::gsl_vector_int = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.162 fgsl_vector_to_fptr Interface Reference

Public Member Functions

- [fgsl_vector_to_fptr](#)
- [fgsl_vector_complex_to_fptr](#)
- [fgsl_vector_int_to_fptr](#)

48.162.1 Constructor & Destructor Documentation

48.162.1.1 fgsl_vector_to_fptr()

```
fgsl_vector_to_fptr::fgsl_vector_to_fptr
```

48.162.2 Member Function/Subroutine Documentation

48.162.2.1 fgsl_vector_complex_to_fptr()

```
fgsl_vector_to_fptr::fgsl_vector_complex_to_fptr
```

48.162.2.2 fgsl_vector_int_to_fptr()

```
fgsl_vector_to_fptr::fgsl_vector_int_to_fptr
```

The documentation for this interface was generated from the following file:

- interface/[generics.finc](#)

48.163 fgsl::fgsl_wavelet Type Reference

Public Attributes

- type(c_ptr) [gsl_wavelet](#) = c_null_ptr

48.163.1 Member Data Documentation

48.163.1.1 gsl_wavelet

```
type(c_ptr) fgsl::fgsl_wavelet::gsl_wavelet = c_null_ptr
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.164 fgsl::fgsl_wavelet_type Type Reference

Public Attributes

- integer(c_int) [which](#) = 0

48.164.1 Member Data Documentation

48.164.1.1 which

```
integer(c_int) fgsl::fgsl_wavelet_type::which = 0
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.165 fgsl::fgsl_wavelet_workspace Type Reference

Public Attributes

- type(c_ptr) [gsl_wavelet_workspace](#)

48.165.1 Member Data Documentation

48.165.1.1 gsl_wavelet_workspace

```
type(c_ptr) fgsl::fgsl_wavelet_workspace::gsl_wavelet_workspace
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.166 fgsl_well_defined Interface Reference

Public Member Functions

- [fgsl_vector_status](#)
- [fgsl_vector_int_status](#)
- [fgsl_matrix_status](#)
- [fgsl_vector_complex_status](#)
- [fgsl_matrix_complex_status](#)
- [fgsl_cheb_series_status](#)
- [fgsl_interp_status](#)
- [fgsl_interp2d_status](#)
- [fgsl_dht_status](#)
- [fgsl_error_handler_status](#)
- [fgsl_integration_workspace_status](#)
- [fgsl_integration_cquad_workspace_status](#)
- [fgsl_integration_qawo_table_status](#)
- [fgsl_integration_qaws_table_status](#)
- [fgsl_integration_glfixed_table_status](#)
- [fgsl_interp_accel_status](#)
- [fgsl_spline_status](#)
- [fgsl_spline2d_status](#)
- [fgsl_permutation_status](#)
- [fgsl_combination_status](#)
- [fgsl_multiset_status](#)
- [fgsl_odeiv_control_status](#)
- [fgsl_odeiv_evolve_status](#)
- [fgsl_odeiv_step_status](#)
- [fgsl_odeiv_system_status](#)
- [fgsl_odeiv2_control_status](#)
- [fgsl_odeiv2_evolve_status](#)
- [fgsl_odeiv2_step_status](#)
- [fgsl_odeiv2_system_status](#)
- [fgsl_odeiv2_driver_status](#)
- [fgsl_poly_complex_workspace_stat](#)
- [fgsl_rng_status](#)
- [fgsl_qrng_status](#)
- [fgsl_ran_discrete_t_status](#)
- [fgsl_root_fsolver_status](#)
- [fgsl_root_fdfsolver_status](#)
- [fgsl_siman_params_t_status](#)
- [fgsl_min_fminimizer_status](#)
- [fgsl_histogram_status](#)
- [fgsl_ntuple_status](#)
- [fgsl_ntuple_value_fn_status](#)
- [fgsl_ntuple_select_fn_status](#)
- [fgsl_monte_function_status](#)
- [fgsl_monte_plain_status](#)
- [fgsl_monte_miser_status](#)
- [fgsl_monte_vegas_status](#)
- [fgsl_multiroot_fsolver_status](#)
- [fgsl_multiroot_fdfsolver_status](#)
- [fgsl_multimin_fminimizer_status](#)
- [fgsl_multimin_fdfminimizer_status](#)

- [fgsl_multifit_status](#)
- [fgsl_multifit_fsolver_status](#)
- [fgsl_multifit_fdfsolver_status](#)
- [fgsl_multifit_nlinear_status](#)
- [fgsl_file_status](#)
- [fgsl_wavelet_status](#)
- [fgsl_wavelet_workspace_status](#)

48.166.1 Member Function/Subroutine Documentation

48.166.1.1 fgsl_cheb_series_status()

`fgsl_well_defined::fgsl_cheb_series_status`

48.166.1.2 fgsl_combination_status()

`fgsl_well_defined::fgsl_combination_status`

48.166.1.3 fgsl_dht_status()

`fgsl_well_defined::fgsl_dht_status`

48.166.1.4 fgsl_error_handler_status()

`fgsl_well_defined::fgsl_error_handler_status`

48.166.1.5 fgsl_file_status()

`fgsl_well_defined::fgsl_file_status`

48.166.1.6 fgsl_histogram_status()

`fgsl_well_defined::fgsl_histogram_status`

48.166.1.7 fgsl_integration_cquad_workspace_status()

```
fgsl_well_defined::fgsl_integration_cquad_workspace_status
```

48.166.1.8 fgsl_integration_glfixed_table_status()

```
fgsl_well_defined::fgsl_integration_glfixed_table_status
```

48.166.1.9 fgsl_integration_qawo_table_status()

```
fgsl_well_defined::fgsl_integration_qawo_table_status
```

48.166.1.10 fgsl_integration_qaws_table_status()

```
fgsl_well_defined::fgsl_integration_qaws_table_status
```

48.166.1.11 fgsl_integration_workspace_status()

```
fgsl_well_defined::fgsl_integration_workspace_status
```

48.166.1.12 fgsl_interp2d_status()

```
fgsl_well_defined::fgsl_interp2d_status
```

48.166.1.13 fgsl_interp_accel_status()

```
fgsl_well_defined::fgsl_interp_accel_status
```

48.166.1.14 fgsl_interp_status()

```
fgsl_well_defined::fgsl_interp_status
```


48.166.1.15 fgsl_matrix_complex_status()

```
fgsl_well_defined::fgsl_matrix_complex_status
```

48.166.1.16 fgsl_matrix_status()

```
fgsl_well_defined::fgsl_matrix_status
```

48.166.1.17 fgsl_min_fminimizer_status()

```
fgsl_well_defined::fgsl_min_fminimizer_status
```

48.166.1.18 fgsl_monte_function_status()

```
fgsl_well_defined::fgsl_monte_function_status
```

48.166.1.19 fgsl_monte_miser_status()

```
fgsl_well_defined::fgsl_monte_miser_status
```

48.166.1.20 fgsl_monte_plain_status()

```
fgsl_well_defined::fgsl_monte_plain_status
```

48.166.1.21 fgsl_monte_vegas_status()

```
fgsl_well_defined::fgsl_monte_vegas_status
```

48.166.1.22 fgsl_multifit_fdfsolver_status()

```
fgsl_well_defined::fgsl_multifit_fdfsolver_status
```

48.166.1.23 fgsl_multifit_fsolver_status()

`fgsl_well_defined::fgsl_multifit_fsolver_status`

48.166.1.24 fgsl_multifit_nlinear_status()

`fgsl_well_defined::fgsl_multifit_nlinear_status`

48.166.1.25 fgsl_multifit_status()

`fgsl_well_defined::fgsl_multifit_status`

48.166.1.26 fgsl_multimin_fdfminimizer_status()

`fgsl_well_defined::fgsl_multimin_fdfminimizer_status`

48.166.1.27 fgsl_multimin_fminimizer_status()

`fgsl_well_defined::fgsl_multimin_fminimizer_status`

48.166.1.28 fgsl_multiroot_fdfsolver_status()

`fgsl_well_defined::fgsl_multiroot_fdfsolver_status`

48.166.1.29 fgsl_multiroot_fsolver_status()

`fgsl_well_defined::fgsl_multiroot_fsolver_status`

48.166.1.30 fgsl_multiset_status()

`fgsl_well_defined::fgsl_multiset_status`

48.166.1.31 fgsl_ntuple_select_fn_status()

fgsl_well_defined::fgsl_ntuple_select_fn_status

48.166.1.32 fgsl_ntuple_status()

fgsl_well_defined::fgsl_ntuple_status

48.166.1.33 fgsl_ntuple_value_fn_status()

fgsl_well_defined::fgsl_ntuple_value_fn_status

48.166.1.34 fgsl_odeiv2_control_status()

fgsl_well_defined::fgsl_odeiv2_control_status

48.166.1.35 fgsl_odeiv2_driver_status()

fgsl_well_defined::fgsl_odeiv2_driver_status

48.166.1.36 fgsl_odeiv2_evolve_status()

fgsl_well_defined::fgsl_odeiv2_evolve_status

48.166.1.37 fgsl_odeiv2_step_status()

fgsl_well_defined::fgsl_odeiv2_step_status

48.166.1.38 fgsl_odeiv2_system_status()

fgsl_well_defined::fgsl_odeiv2_system_status

48.166.1.39 fgsl_odeiv_control_status()

```
fgsl_well_defined::fgsl_odeiv_control_status
```

48.166.1.40 fgsl_odeiv_evolve_status()

```
fgsl_well_defined::fgsl_odeiv_evolve_status
```

48.166.1.41 fgsl_odeiv_step_status()

```
fgsl_well_defined::fgsl_odeiv_step_status
```

48.166.1.42 fgsl_odeiv_system_status()

```
fgsl_well_defined::fgsl_odeiv_system_status
```

48.166.1.43 fgsl_permutation_status()

```
fgsl_well_defined::fgsl_permutation_status
```

48.166.1.44 fgsl_poly_complex_workspace_stat()

```
fgsl_well_defined::fgsl_poly_complex_workspace_stat
```

48.166.1.45 fgsl_qrng_status()

```
fgsl_well_defined::fgsl_qrng_status
```

48.166.1.46 fgsl_ran_discrete_t_status()

```
fgsl_well_defined::fgsl_ran_discrete_t_status
```

48.166.1.47 fgsl_rng_status()

fgsl_well_defined::fgsl_rng_status

48.166.1.48 fgsl_root_fdfsolver_status()

fgsl_well_defined::fgsl_root_fdfsolver_status

48.166.1.49 fgsl_root_fsolver_status()

fgsl_well_defined::fgsl_root_fsolver_status

48.166.1.50 fgsl_siman_params_t_status()

fgsl_well_defined::fgsl_siman_params_t_status

48.166.1.51 fgsl_spline2d_status()

fgsl_well_defined::fgsl_spline2d_status

48.166.1.52 fgsl_spline_status()

fgsl_well_defined::fgsl_spline_status

48.166.1.53 fgsl_vector_complex_status()

fgsl_well_defined::fgsl_vector_complex_status

48.166.1.54 fgsl_vector_int_status()

fgsl_well_defined::fgsl_vector_int_status

48.166.1.55 fgsl_vector_status()

```
fgsl_well_defined::fgsl_vector_status
```

48.166.1.56 fgsl_wavelet_status()

```
fgsl_well_defined::fgsl_wavelet_status
```

48.166.1.57 fgsl_wavelet_workspace_status()

```
fgsl_well_defined::fgsl_wavelet_workspace_status
```

The documentation for this interface was generated from the following file:

- [interface/generics.finc](#)

48.167 fgsl::gsl_complex Type Reference

Public Attributes

- `real(c_double), dimension(2)` [dat](#)

48.167.1 Member Data Documentation

48.167.1.1 dat

```
real(c_double), dimension(2) fgsl::gsl_complex::dat
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.168 fgsl::gsl_sf_result Type Reference

Public Attributes

- `real(c_double)` [val](#)
- `real(c_double)` [err](#)

48.168.1 Member Data Documentation

48.168.1.1 err

```
real(c_double) fgsl::gsl_sf_result::err
```

48.168.1.2 val

```
real(c_double) fgsl::gsl_sf_result::val
```

The documentation for this type was generated from the following file:

- [fgsl.F90](#)

48.169 fgsl::gsl_sf_result_e10 Type Reference

Public Attributes

- `real(c_double)` [val](#)
- `real(c_double)` [err](#)
- `integer(c_int)` [e10](#)

48.169.1 Member Data Documentation

48.169.1.1 e10

```
integer(c_int) fgsl::gsl_sf_result_e10::e10
```

48.169.1.2 err

```
real(c_double) fgsl::gsl_sf_result_e10::err
```

48.169.1.3 val

```
real(c_double) fgsl::gsl_sf_result_e10::val
```

The documentation for this type was generated from the following file:

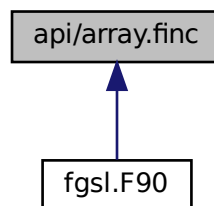
- [fgsl.F90](#)

Chapter 49

File Documentation

49.1 `api/array.finc` File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- `type(fgsI_vector)` function [fgsI_vector_init](#) (array, stride, stat)
Initialize a GSL vector object. This is invoked via the generic [fgsI_vector_init](#).
- `type(fgsI_vector_int)` function [fgsI_vector_int_init](#) (array, stride, stat)
- `type(fgsI_vector)` function [fgsI_vector_init_legacy](#) (type)
Legacy specific [fgsI_vector_init](#) of for GSL vector initialization.
- `integer(fgsI_int)` function [fgsI_vector_align](#) (array, len, fvec, size, offset, stride)
Legacy function to wrap a rank 1 Fortran array slice inside a double precision real GSL vector object. This is invoked via the generic [fgsI_vector_align](#). It is recommended to update codes using this to use the new [fgsI_vector_init](#) specific instead.
- `real(fgsI_double)` function, `dimension(:)`, pointer [fgsI_vector_to_fptr](#) (fvec)
Function to associate a Fortran pointer with a GSL vector object.
- `integer(fgsI_int)` function, `dimension(:)`, pointer [fgsI_vector_int_to_fptr](#) (fvec)
- `integer(fgsI_int)` function [fgsI_vector_pointer_align](#) (ptr, fvec)

Legacy function to associate a Fortran pointer with the data stored inside a GSL vector object. Codes should be updated to use `fgsl_vector_ptr`. This is invoked via the generic `fgsl_vector_align`. Objects of type `gsl_vector` which are returned by GSL routines often are persistent subobjects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

- subroutine `fgsl_vector_to_array` (result, source)

The assignment operator (see [interface/generics.finc](#)) is overloaded to enable copying of the content of a GSL vector into a Fortran array.

- subroutine `fgsl_vector_free` (fvec)

Free the resources inside a GSL vector object previously established by a call to `fgsl_vector_init()`. This is invoked via the generic `fgsl_vector_free`.

- subroutine `fgsl_vector_int_free` (fvec)
- subroutine `fgsl_vector_c_ptr` (res, src)
- logical function `fgsl_vector_status` (vector)
- logical function `fgsl_vector_int_status` (vector)

Inquire the size of a double precision real GSL vector object.

- integer(`fgsl_size_t`) function `fgsl_sizeof_vector` (w)
- type(`fgsl_vector_complex`) function `fgsl_vector_complex_init_legacy` (type)
- type(`fgsl_vector_complex`) function `fgsl_vector_complex_init` (array, stride, stat)
- integer(`fgsl_int`) function `fgsl_vector_complex_align` (array, len, fvec, size, offset, stride)

Wrap a rank 1 Fortran array slice inside a double precision complex real GSL vector object. This is invoked via the generic `fgsl_vector_align`.

- integer(`fgsl_int`) function `fgsl_vector_complex_pointer_align` (ptr, fvec)

Associate a Fortran pointer with the data stored inside a GSL vector object. This is invoked via the generic `fgsl_vector_align`. Objects of type `gsl_vector_complex` which are returned by GSL routines often are persistent subobjects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

- complex(`fgsl_double`) function, dimension(:), pointer `fgsl_vector_complex_to_fptr` (fvec)
- subroutine `fgsl_vector_complex_to_array` (result, source)

The assignment operator (see [interface/generics.finc](#)) is overloaded to enable copying of the content of a complex GSL vector into a Fortran array.

- subroutine `fgsl_vector_complex_free` (fvec)

Free the resources inside a complex GSL vector object previously established by a call to `fgsl_vector_complex_init()`. This is invoked via the generic `fgsl_vector_free`.

- subroutine `fgsl_vector_complex_c_ptr` (res, src)
- logical function `fgsl_vector_complex_status` (vector_complex)
- integer(`fgsl_size_t`) function `fgsl_sizeof_vector_complex` (w)

Inquire the size of a double precision complex GSL vector object.

- type(`fgsl_matrix`) function `fgsl_matrix_init_legacy` (type)

Legacy function to initialize a GSL matrix object. This is invoked via the generic `fgsl_matrix_init`.

- type(`fgsl_matrix`) function `fgsl_matrix_init` (array, n, m, stat)

Initialize a rank 2 Fortran array to become associated with a double precision GSL matrix object. This is invoked via the generic `fgsl_matrix_init`.

- integer(`fgsl_int`) function `fgsl_matrix_align` (array, lda, n, m, fmat)

Legacy specific to wrap a rank 2 Fortran array inside a double precision real GSL matrix object. This is invoked via the generic `fgsl_matrix_align`.

- integer(`fgsl_int`) function `fgsl_matrix_pointer_align` (ptr, fmat)

Associate a Fortran pointer with the data stored inside a GSL matrix object. This is invoked via the generic `fgsl_matrix_align`. Objects of type `gsl_matrix` which are returned by GSL routines often are persistent subobjects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

- real(`fgsl_double`) function, dimension(:, :), pointer `fgsl_matrix_to_fptr` (fmat)

Associate a Fortran pointer with the data stored inside a GSL matrix object. This is invoked via the generic [fgsl_matrix_to_fptr](#). Objects of type `gsl_matrix` which are returned by GSL routines often are persistent sub-objects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

- subroutine [fgsl_matrix_to_array](#) (result, source)

The assignment operator (see [interface/generics.finc](#)) is overloaded to enable copying of the content of a GSL matrix into a rank 2 Fortran array.

- subroutine [fgsl_matrix_free](#) (fvec)

Free the resources inside a GSL matrix object previously established by a call to [fgsl_matrix_init\(\)](#). This is invoked via the generic [fgsl_matrix_free](#).

- subroutine [fgsl_matrix_c_ptr](#) (res, src)
- logical function [fgsl_matrix_status](#) (matrix)
- integer([fgsl_size_t](#)) function [fgsl_sizeof_matrix](#) (w)

Inquire the number of elements in a double precision real GSL matrix object.

- type([fgsl_matrix_complex](#)) function [fgsl_matrix_complex_init_legacy](#) (type)

Legacy specifit to initialize a GSL matrix object. This is invoked via the generic [fgsl_matrix_init](#).

- type([fgsl_matrix_complex](#)) function [fgsl_matrix_complex_init](#) (array, n, m, stat)

Initialize a rank 2 Fortran array to become associated with a double precision complex GSL matrix object. This is invoked via the generic [fgsl_matrix_init](#).

- integer([fgsl_int](#)) function [fgsl_matrix_complex_align](#) (array, lda, n, m, fmat)

Legacy function to wrap a rank 2 Fortran array inside a double precision complex GSL matrix object. This is invoked via the generic [fgsl_matrix_align](#).

- integer([fgsl_int](#)) function [fgsl_matrix_complex_pointer_align](#) (ptr, fmat)

Associate a Fortran pointer with the data stored inside a complex GSL matrix object. This is invoked via the generic [fgsl_matrix_align](#). Objects of type `gsl_matrix_complex` which are returned by GSL routines often are persistent subobjects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

- complex([fgsl_double](#)) function, dimension(:,:), pointer [fgsl_matrix_complex_to_fptr](#) (fmat)
- subroutine [fgsl_matrix_complex_to_array](#) (result, source)

The assignment operator (see [interface/generics.finc](#)) is overloaded to enable copying of the content of a complex GSL matrix into a rank 2 Fortran array.

- subroutine [fgsl_matrix_complex_free](#) (fvec)

Free the resources inside a complex GSL matrix object previously established by a call to [fgsl_matrix_complex_init\(\)](#). This is invoked via the generic [fgsl_matrix_free](#).

- subroutine [fgsl_matrix_complex_c_ptr](#) (res, src)
- logical function [fgsl_matrix_complex_status](#) (matrix_complex)
- integer([fgsl_size_t](#)) function [fgsl_sizeof_matrix_complex](#) (w)

Inquire the number of elements in a double precision complex GSL matrix object.

- integer([fgsl_size_t](#)) function [fgsl_vector_get_size](#) (vec)
- integer([fgsl_size_t](#)) function [fgsl_vector_get_stride](#) (vec)
- integer([fgsl_size_t](#)) function [fgsl_matrix_get_size1](#) (matr)
- integer([fgsl_size_t](#)) function [fgsl_matrix_get_size2](#) (matr)
- integer([fgsl_size_t](#)) function [fgsl_matrix_get_tda](#) (matr)

49.1.1 Function/Subroutine Documentation

49.1.1.1 fgsl_matrix_align()

```
integer(fgsl_int) function fgsl_matrix_align (
    real(fgsl_double), dimension(lda, m), intent(in), target array,
    integer(fgsl_size_t), intent(in) lda,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) m,
    type(fgsl_matrix), intent(inout) fmat )
```

Legacy specific to wrap a rank 2 Fortran array inside a double precision real GSL matrix object. This is invoked via the generic [fgsl_matrix_align](#).

Parameters

<i>array</i>	- requires the actual argument to have the TARGET attribute. Otherwise being passed by reference is not guaranteed by the Fortran standard.
<i>lda</i>	- leading dimension of the rank 2 array
<i>n</i>	- number of rows in array
<i>m</i>	- number of columns in array
<i>fmat</i>	- previously initialized double precision GSL matrix object

Returns

Status

49.1.1.2 fgsl_matrix_c_ptr()

```
subroutine fgsl_matrix_c_ptr (
    type(fgsl_matrix), intent(out) res,
    type(c_ptr), intent(in) src )
```

49.1.1.3 fgsl_matrix_complex_align()

```
integer(fgsl_int) function fgsl_matrix_complex_align (
    complex(fgsl_double_complex), dimension(lda, m), intent(in), target array,
    integer(fgsl_size_t), intent(in) lda,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) m,
    type(fgsl_matrix_complex), intent(inout) fmat )
```

Legacy function to wrap a rank 2 Fortran array inside a double precision complex GSL matrix object. This is invoked via the generic [fgsl_matrix_align](#).

Parameters

<i>array</i>	- requires the actual argument to have the TARGET attribute. Otherwise being passed by reference is not guaranteed by the Fortran standard.
<i>lda</i>	- leading dimension of the rank 2 array
<i>n</i>	- number of rows in array
<i>m</i>	- number of columns in array
<i>fmat</i>	- previously initialized double precision complex GSL matrix object

Returns

Status

49.1.1.4 fgsl_matrix_complex_c_ptr()

```
subroutine fgsl_matrix_complex_c_ptr (
    type(fgsl_matrix_complex), intent(out) res,
    type(c_ptr), intent(in) src )
```

49.1.1.5 fgsl_matrix_complex_free()

```
subroutine fgsl_matrix_complex_free (
    type(fgsl_matrix_complex), intent(inout) fvec )
```

Free the resources inside a complex GSL matrix object previously established by a call to [fgsl_matrix_complex_init\(\)](#). This is invoked via the generic [fgsl_matrix_free](#).

49.1.1.6 fgsl_matrix_complex_init()

```
type(fgsl_matrix_complex) function fgsl_matrix_complex_init (
    complex(fgsl_double_complex), dimension(:, :), intent(in), target, contiguous
array,
    integer(fgsl_size_t), intent(in), optional n,
    integer(fgsl_size_t), intent(in), optional m,
    integer(fgsl_int), optional stat )
```

Initialize a rank 2 Fortran array to become associated with a double precision complex GSL matrix object. This is invoked via the generic [fgsl_matrix_init](#).

Parameters

<i>array</i>	- requires the actual argument to have the TARGET and CONTIGUOUS attributes.
<i>n</i>	- number of rows (C:columns) in array
<i>m</i>	- number of columns (C:rows) in array
<i>fmat</i>	- double precision complex GSL matrix object, which is allocated

Returns

Status

49.1.1.7 fgsl_matrix_complex_init_legacy()

```
type(fgsl_matrix_complex) function fgsl_matrix_complex_init_legacy (
    complex(fgsl_double_complex), intent(in) type )
```

Legacy specifit to initialize a GSL matrix object. This is invoked via the generic [fgsl_matrix_init](#).

Parameters

<i>type</i>	- determine intrinsic type of vector object
-------------	---

Returns

new object of type `fgsl_matrix`.

49.1.1.8 fgsl_matrix_complex_pointer_align()

```
integer(fgsl_int) function fgsl_matrix_complex_pointer_align (
    complex(fgsl_double_complex), dimension(:, :), intent(out), pointer ptr,
    type(fgsl_matrix_complex), intent(in) fmat )
```

Associate a Fortran pointer with the data stored inside a complex GSL matrix object. This is invoked via the generic [fgsl_matrix_align](#). Objects of type `gsl_matrix_complex` which are returned by GSL routines often are persistent subobjects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

Parameters

<i>ptr</i>	- rank 2 Fortran pointer
<i>fmat</i>	- double precision complex GSL matrix

Returns

Status

49.1.1.9 fgsl_matrix_complex_status()

```
logical function fgsl_matrix_complex_status (
    type(fgsl_matrix_complex), intent(in) matrix_complex )
```

49.1.1.10 fgsl_matrix_complex_to_array()

```
subroutine fgsl_matrix_complex_to_array (
    complex(fgsl_double_complex), dimension(:, :), intent(inout) result,
    type(fgsl_matrix_complex), intent(in) source )
```

The assignment operator (see [interface/generics.finc](#)) is overloaded to enable copying of the content of a complex GSL matrix into a rank 2 Fortran array.

49.1.1.11 fgsl_matrix_complex_to_fptr()

```
complex(fgsl_double) function fgsl_matrix_complex_to_fptr (
    type(fgsl_matrix_complex), intent(in) fmat )
```

49.1.1.12 fgsl_matrix_free()

```
subroutine fgsl_matrix_free (
    type(fgsl_matrix), intent(inout) fvec )
```

Free the resources inside a GSL matrix object previously established by a call to [fgsl_matrix_init\(\)](#). This is invoked via the generic [fgsl_matrix_free](#).

49.1.1.13 fgsl_matrix_get_size1()

```
integer(fgsl_size_t) function fgsl_matrix_get_size1 (
    type(fgsl_matrix), intent(in) matr )
```

49.1.1.14 fgsl_matrix_get_size2()

```
integer(fgsl_size_t) function fgsl_matrix_get_size2 (
    type(fgsl_matrix), intent(in) matr )
```

49.1.1.15 fgsl_matrix_get_tda()

```
integer(fgsl_size_t) function fgsl_matrix_get_tda (
    type(fgsl_matrix), intent(in) matr )
```

49.1.1.16 fgsl_matrix_init()

```
type(fgsl_matrix) function fgsl_matrix_init (
    real(fgsl_double), dimension(:, :), intent(in), target, contiguous array,
    integer(fgsl_size_t), intent(in), optional n,
    integer(fgsl_size_t), intent(in), optional m,
    integer(fgsl_int), optional stat )
```

Initialize a rank 2 Fortran array to become associated with a double precision GSL matrix object. This is invoked via the generic [fgsl_matrix_init](#).

Parameters

<i>array</i>	- requires the actual argument to have the TARGET and CONTIGUOUS attributes.
<i>n</i>	- number of rows (C:columns) in array
<i>m</i>	- number of columns (C:rows) in array
<i>fmat</i>	- double precision GSL matrix object, which is allocated

Returns

Status

49.1.1.17 fgsl_matrix_init_legacy()

```
type(fgsl_matrix) function fgsl_matrix_init_legacy (
    real(fgsl_double), intent(in) type )
```

Legacy function to initialize a GSL matrix object. This is invoked via the generic [fgsl_matrix_init](#).

Parameters

<i>type</i>	- determine intrinsic type of vector object
-------------	---

Returns

new object of type fgsl_matrix.

49.1.1.18 fgsl_matrix_pointer_align()

```
integer(fgsl_int) function fgsl_matrix_pointer_align (
    real(fgsl_double), dimension(:,:), intent(out), pointer ptr,
    type(fgsl_matrix), intent(in) fmat )
```

Associate a Fortran pointer with the data stored inside a GSL matrix object. This is invoked via the generic [fgsl_matrix_align](#). Objects of type `gsl_matrix` which are returned by GSL routines often are persistent sub-objects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

Parameters

<i>ptr</i>	- rank 2 Fortran pointer
<i>fmat</i>	- double precision real GSL matrix

Returns

Status

49.1.1.19 fgsl_matrix_status()

```
logical function fgsl_matrix_status (
    type(fgsl_matrix), intent(in) matrix )
```

49.1.1.20 fgsl_matrix_to_array()

```
subroutine fgsl_matrix_to_array (
    real(fgsl_double), dimension(:,:), intent(inout) result,
    type(fgsl_matrix), intent(in) source )
```

The assignment operator (see [interface/generics.finc](#)) is overloaded to enable copying of the content of a GSL matrix into a rank 2 Fortran array.

49.1.1.21 fgsl_matrix_to_fptr()

```
real(fgsl_double) function, dimension(:,:), pointer fgsl_matrix_to_fptr (
    type(fgsl_matrix), intent(in) fmat )
```

Associate a Fortran pointer with the data stored inside a GSL matrix object. This is invoked via the generic [fgsl_matrix_to_fptr](#). Objects of type `gsl_matrix` which are returned by GSL routines often are persistent subobjects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

Parameters

<i>fmat</i>	- GSL matrix
-------------	--------------

Returns

rank 2 Fortran pointer

49.1.1.22 fgsl_sizeof_matrix()

```
integer(fgsl_size_t) function fgsl_sizeof_matrix (
    type(fgsl_matrix), intent(in) w )
```

Inquire the number of elements in a double precision real GSL matrix object.

49.1.1.23 fgsl_sizeof_matrix_complex()

```
integer(fgsl_size_t) function fgsl_sizeof_matrix_complex (
    type(fgsl_matrix_complex), intent(in) w )
```

Inquire the number of elements in a double precision complex GSL matrix object.

49.1.1.24 fgsl_sizeof_vector()

```
integer(fgsl_size_t) function fgsl_sizeof_vector (
    type(fgsl_vector), intent(in) w )
```

49.1.1.25 fgsl_sizeof_vector_complex()

```
integer(fgsl_size_t) function fgsl_sizeof_vector_complex (
    type(fgsl_vector_complex), intent(in) w )
```

Inquire the size of a double precision complex GSL vector object.

49.1.1.26 fgsl_vector_align()

```
integer(fgsl_int) function fgsl_vector_align (
    real(fgsl_double), dimension(len), intent(in), target array,
    integer(fgsl_size_t), intent(in) len,
    type(fgsl_vector), intent(inout) fvec,
    integer(fgsl_size_t), intent(in) size,
    integer(fgsl_size_t), intent(in) offset,
    integer(fgsl_size_t), intent(in) stride )
```

Legacy function to wrap a rank 1 Fortran array slice inside a double precision real GSL vector object. This is invoked via the generic [fgsl_vector_align](#). It is recommended to update codes using this to use the new [fgsl_vector_init](#) specific instead.

Parameters

<i>array</i>	- requires the actual argument to have the TARGET attribute. Otherwise being passed by reference is not guaranteed by the Fortran standard.
<i>len</i>	- number of elements of the rank 1 array
<i>fvec</i>	- previously initialized GSL vector object
<i>size</i>	- number of elements from array wrapped inside fvec
<i>offset</i>	- index of first element of array to be mapped to fvec
<i>stride</i>	- stride in array for successive elements of fvec

Returns

Status

49.1.1.27 fgsl_vector_c_ptr()

```
subroutine fgsl_vector_c_ptr (
    type(fgsl_vector), intent(out) res,
    type(c_ptr), intent(in) src )
```

49.1.1.28 fgsl_vector_complex_align()

```
integer(fgsl_int) function fgsl_vector_complex_align (
    complex(fgsl_double_complex), dimension(len), intent(in), target array,
    integer(fgsl_size_t), intent(in) len,
    type(fgsl_vector_complex), intent(inout) fvec,
    integer(fgsl_size_t), intent(in) size,
    integer(fgsl_size_t), intent(in) offset,
    integer(fgsl_size_t), intent(in) stride )
```

Wrap a rank 1 Fortran array slice inside a double precision complex real GSL vector object. This is invoked via the generic [fgsl_vector_align](#).

Parameters

<i>array</i>	- requires the actual argument to have the TARGET attribute. Otherwise being passed by reference is not guaranteed by the Fortran standard.
<i>len</i>	- number of elements of the rank 1 array
<i>fvec</i>	- previously initialized complex GSL vector object
<i>size</i>	- number of elements from array wrapped inside fvec
<i>offset</i>	- index of first element of array to be mapped to fvec
<i>stride</i>	- stride in array for successive elements of fvec

Returns

Status

49.1.1.29 fgsl_vector_complex_c_ptr()

```
subroutine fgsl_vector_complex_c_ptr (
    type(fgsl_vector_complex), intent(out) res,
    type(c_ptr), intent(in) src )
```

49.1.1.30 fgsl_vector_complex_free()

```
subroutine fgsl_vector_complex_free (
    type(fgsl_vector_complex), intent(inout) fvec )
```

Free the resources inside a complex GSL vector object previously established by a call to [fgsl_vector_complex_init\(\)](#). This is invoked via the generic [fgsl_vector_free](#).

49.1.1.31 fgsl_vector_complex_init()

```
type(fgsl_vector_complex) function fgsl_vector_complex_init (
    complex(fgsl_double), dimension(:), intent(in), target, contiguous array,
    integer(fgsl_size_t), intent(in), optional stride,
    integer(fgsl_int), intent(inout), optional stat )
```

49.1.1.32 fgsl_vector_complex_init_legacy()

```
type(fgsl_vector_complex) function fgsl_vector_complex_init_legacy (
    complex(fgsl_double_complex), intent(in) type )
```

Initialize a complex GSL vector object. This is invoked via the generic [fgsl_vector_init](#).

Parameters

<i>type</i>	- determine intrinsic type of vector object
-------------	---

Returns

new object of type fgsl_vector

49.1.1.33 fgsl_vector_complex_pointer_align()

```
integer(fgsl_int) function fgsl_vector_complex_pointer_align (
    complex(fgsl_double_complex), dimension(:), intent(out), pointer ptr,
    type(fgsl_vector_complex), intent(in) fvec )
```

Associate a Fortran pointer with the data stored inside a GSL vector object. This is invoked via the generic [fgsl_vector_align](#). Objects of type `gsl_vector_complex` which are returned by GSL routines often are persistent subobjects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

Parameters

<i>ptr</i>	- rank 1 Fortran pointer
<i>fvec</i>	- double precision complex GSL vector

Returns

Status

49.1.1.34 fgsl_vector_complex_status()

```
logical function fgsl_vector_complex_status (  
    type(fgsl_vector_complex), intent(in) vector_complex )
```

49.1.1.35 fgsl_vector_complex_to_array()

```
subroutine fgsl_vector_complex_to_array (  
    complex(fgsl_double_complex), dimension(:), intent(inout) result,  
    type(fgsl_vector_complex), intent(in) source )
```

The assignment operator (see [interface/generics.finc](#)) is overloaded to enable copying of the content of a complex GSL vector into a Fortran array.

49.1.1.36 fgsl_vector_complex_to_fptr()

```
complex(fgsl_double) function, dimension(:), pointer fgsl_vector_complex_to_fptr (  
    type(fgsl_vector_complex), intent(in) fvec )
```

49.1.1.37 fgsl_vector_free()

```
subroutine fgsl_vector_free (  
    type(fgsl_vector), intent(inout) fvec )
```

Free the resources inside a GSL vector object previously established by a call to [fgsl_vector_init\(\)](#). This is invoked via the generic [fgsl_vector_free](#).

49.1.1.38 fgsl_vector_get_size()

```
integer(fgsl_size_t) function fgsl_vector_get_size (  
    type(fgsl_vector), intent(in) vec )
```

49.1.1.39 fgsl_vector_get_stride()

```
integer(fgsl_size_t) function fgsl_vector_get_stride (
    type(fgsl_vector), intent(in) vec )
```

49.1.1.40 fgsl_vector_init()

```
type(fgsl_vector) function fgsl_vector_init (
    real(fgsl_double), dimension(:), intent(in), target, contiguous array,
    integer(fgsl_size_t), intent(in), optional stride,
    integer(fgsl_int), intent(inout), optional stat )
```

Initialize a GSL vector object. This is invoked via the generic [fgsl_vector_init](#).

Parameters

in	<i>array.</i>	The result variable's block is aliased to this contiguous array or a section of it. The actual argument must be a CONTIGUOUS array with the TARGET attribute. It can be of type integer(fgsl_int) or real(fgsl_double).
in	<i>stride.</i>	If present, the stride between subsequent array elements of the function result. Otherwise, the value one is assumed.
in, out	<i>status.</i>	If present, the exit status.

49.1.1.41 fgsl_vector_init_legacy()

```
type(fgsl_vector) function fgsl_vector_init_legacy (
    real(fgsl_double), intent(in) type )
```

Legacy specific [fgsl_vector_init](#) of for GSL vector initialization.

Parameters

<i>type</i>	- determine intrinsic type of vector object
-------------	---

Returns

new object of type fgsl_vector

49.1.1.42 fgsl_vector_int_free()

```
subroutine fgsl_vector_int_free (
    type(fgsl_vector_int), intent(inout) fvec )
```

49.1.1.43 fgsl_vector_int_init()

```

type(fgsl_vector_int) function fgsl_vector_int_init (
    integer(fgsl_int), dimension(:), intent(in), target, contiguous array,
    integer(fgsl_size_t), intent(in), optional stride,
    integer(fgsl_int), intent(inout), optional stat )

```

49.1.1.44 fgsl_vector_int_status()

```

logical function fgsl_vector_int_status (
    type(fgsl_vector_int), intent(in) vector )

```

Inquire the size of a double precision real GSL vector object.

49.1.1.45 fgsl_vector_int_to_fptr()

```

integer(fgsl_int) function, dimension(:), pointer fgsl_vector_int_to_fptr (
    type(fgsl_vector_int), intent(in) fvec )

```

49.1.1.46 fgsl_vector_pointer_align()

```

integer(fgsl_int) function fgsl_vector_pointer_align (
    real(fgsl_double), dimension(:), intent(out), pointer ptr,
    type(fgsl_vector), intent(in) fvec )

```

Legacy function to associate a Fortran pointer with the data stored inside a GSL vector object. Codes should be updated to use `fgsl_vector_ptr`. This is invoked via the generic [fgsl_vector_align](#). Objects of type `gsl_vector` which are returned by GSL routines often are persistent subobjects of other GSL objects. A Fortran pointer aligned with a subobject hence will remain up-to-date throughout the lifetime of the object; it may become undefined once the object ceases to exist.

Parameters

<i>ptr</i>	- rank 1 Fortran pointer
<i>fvec</i>	- double precision real GSL vector

Returns

Status

49.1.1.47 fgsl_vector_status()

```
logical function fgsl_vector_status (
    type(fgsl_vector), intent(in) vector )
```

49.1.1.48 fgsl_vector_to_array()

```
subroutine fgsl_vector_to_array (
    real(fgsl_double), dimension(:), intent(inout) result,
    type(fgsl_vector), intent(in) source )
```

The assignment operator (see [interface/generics.finc](#)) is overloaded to enable copying of the content of a GSL vector into a Fortran array.

49.1.1.49 fgsl_vector_to_fptr()

```
real(fgsl_double) function, dimension(:), pointer fgsl_vector_to_fptr (
    type(fgsl_vector), intent(in) fvec )
```

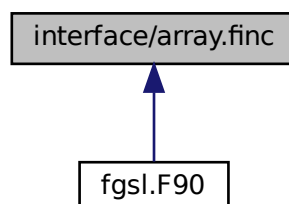
Function to associate a Fortran pointer with a GSL vector object.

Parameters

in	fvec.	double precision real GSL vector The function result is a null pointer if the object is invalid, otherwise it points to the data described by the fvec object
----	-------	---

49.2 interface/array.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- real(c_double) function [gsl_vector_get](#) (v, i)
- type(c_ptr) function [gsl_vector_ptr](#) (v, i)
- type(c_ptr) function [gsl_vector_int_ptr](#) (v, i)
- type(gsl_complex) function [gsl_vector_complex_get](#) (v, i)
- type(c_ptr) function [gsl_vector_complex_ptr](#) (v, i)
- real(c_double) function [gsl_matrix_get](#) (v, j, i)
- type(gsl_complex) function [gsl_matrix_complex_get](#) (v, j, i)
- type(c_ptr) function [fgsl_aux_vector_double_init](#) ()
- subroutine [fgsl_aux_vector_double_free](#) (v)
- integer(c_int) function [fgsl_aux_vector_double_align](#) (a, len, fvec, size, offset, stride)
- integer(c_size_t) function [fgsl_aux_vector_double_size](#) (fvec)
- integer(c_size_t) function [fgsl_aux_vector_double_stride](#) (fvec)
- type(c_ptr) function [fgsl_aux_vector_int_init](#) ()
- subroutine [fgsl_aux_vector_int_free](#) (v)
- integer(c_int) function [fgsl_aux_vector_int_align](#) (a, len, fvec, size, offset, stride)
- integer(c_size_t) function [fgsl_aux_vector_int_size](#) (fvec)
- integer(c_size_t) function [fgsl_aux_vector_int_stride](#) (fvec)
- type(c_ptr) function [fgsl_aux_matrix_double_init](#) ()
- subroutine [fgsl_aux_matrix_double_free](#) (v)
- integer(c_int) function [fgsl_aux_matrix_double_align](#) (a, lda, n, m, fvec)
- subroutine [fgsl_aux_matrix_double_size](#) (fmat, lda, m, n)
- type(c_ptr) function [gsl_matrix_ptr](#) (m, i, j)
- integer(c_size_t) function [gsl_aux_sizeof_vector](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_matrix](#) ()
- type(c_ptr) function [fgsl_aux_vector_complex_init](#) ()
- subroutine [fgsl_aux_vector_complex_free](#) (v)
- integer(c_int) function [fgsl_aux_vector_complex_align](#) (a, len, fvec, size, offset, stride)
- integer(c_size_t) function [fgsl_aux_vector_complex_size](#) (fvec)
- integer(c_size_t) function [fgsl_aux_vector_complex_stride](#) (fvec)
- type(c_ptr) function [fgsl_aux_matrix_complex_init](#) ()
- subroutine [fgsl_aux_matrix_complex_free](#) (v)
- integer(c_int) function [fgsl_aux_matrix_complex_align](#) (a, lda, n, m, fvec)
- subroutine [fgsl_aux_matrix_complex_size](#) (fmat, lda, m, n)
- type(c_ptr) function [gsl_matrix_complex_ptr](#) (m, i, j)
- integer(c_size_t) function [gsl_aux_sizeof_vector_complex](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_matrix_complex](#) ()

49.2.1 Function/Subroutine Documentation

49.2.1.1 fgsl_aux_matrix_complex_align()

```
integer(c_int) function fgsl_aux_matrix_complex_align (
    type(c_ptr), value a,
    integer(c_size_t), value lda,
    integer(c_size_t), value n,
    integer(c_size_t), value m,
    type(c_ptr), value fvec )
```

49.2.1.2 fgsl_aux_matrix_complex_free()

```
subroutine fgsl_aux_matrix_complex_free (  
    type(c_ptr), value v )
```

49.2.1.3 fgsl_aux_matrix_complex_init()

```
type(c_ptr) function fgsl_aux_matrix_complex_init
```

49.2.1.4 fgsl_aux_matrix_complex_size()

```
subroutine fgsl_aux_matrix_complex_size (  
    type(c_ptr), value fmat,  
    integer(c_size_t), intent(out) lda,  
    integer(c_size_t), intent(out) m,  
    integer(c_size_t), intent(out) n )
```

49.2.1.5 fgsl_aux_matrix_double_align()

```
integer(c_int) function fgsl_aux_matrix_double_align (  
    type(c_ptr), value a,  
    integer(c_size_t), value lda,  
    integer(c_size_t), value n,  
    integer(c_size_t), value m,  
    type(c_ptr), value fvec )
```

49.2.1.6 fgsl_aux_matrix_double_free()

```
subroutine fgsl_aux_matrix_double_free (  
    type(c_ptr), value v )
```

49.2.1.7 fgsl_aux_matrix_double_init()

```
type(c_ptr) function fgsl_aux_matrix_double_init
```

49.2.1.8 fgsl_aux_matrix_double_size()

```
subroutine fgsl_aux_matrix_double_size (
    type(c_ptr), value fmat,
    integer(c_size_t), intent(out) lda,
    integer(c_size_t), intent(out) m,
    integer(c_size_t), intent(out) n )
```

49.2.1.9 fgsl_aux_vector_complex_align()

```
integer(c_int) function fgsl_aux_vector_complex_align (
    type(c_ptr), value a,
    integer(c_size_t), value len,
    type(c_ptr), value fvec,
    integer(c_size_t), value size,
    integer(c_size_t), value offset,
    integer(c_size_t), value stride )
```

49.2.1.10 fgsl_aux_vector_complex_free()

```
subroutine fgsl_aux_vector_complex_free (
    type(c_ptr), value v )
```

49.2.1.11 fgsl_aux_vector_complex_init()

```
type(c_ptr) function fgsl_aux_vector_complex_init
```

49.2.1.12 fgsl_aux_vector_complex_size()

```
integer(c_size_t) function fgsl_aux_vector_complex_size (
    type(c_ptr), value fvec )
```

49.2.1.13 fgsl_aux_vector_complex_stride()

```
integer(c_size_t) function fgsl_aux_vector_complex_stride (
    type(c_ptr), value fvec )
```

49.2.1.14 fgsl_aux_vector_double_align()

```
integer(c_int) function fgsl_aux_vector_double_align (  
    type(c_ptr), value a,  
    integer(c_size_t), value len,  
    type(c_ptr), value fvec,  
    integer(c_size_t), value size,  
    integer(c_size_t), value offset,  
    integer(c_size_t), value stride )
```

49.2.1.15 fgsl_aux_vector_double_free()

```
subroutine fgsl_aux_vector_double_free (  
    type(c_ptr), value v )
```

49.2.1.16 fgsl_aux_vector_double_init()

```
type(c_ptr) function fgsl_aux_vector_double_init
```

49.2.1.17 fgsl_aux_vector_double_size()

```
integer(c_size_t) function fgsl_aux_vector_double_size (  
    type(c_ptr), value fvec )
```

49.2.1.18 fgsl_aux_vector_double_stride()

```
integer(c_size_t) function fgsl_aux_vector_double_stride (  
    type(c_ptr), value fvec )
```

49.2.1.19 fgsl_aux_vector_int_align()

```
integer(c_int) function fgsl_aux_vector_int_align (  
    type(c_ptr), value a,  
    integer(c_size_t), value len,  
    type(c_ptr), value fvec,  
    integer(c_size_t), value size,  
    integer(c_size_t), value offset,  
    integer(c_size_t), value stride )
```

49.2.1.20 fgsl_aux_vector_int_free()

```
subroutine fgsl_aux_vector_int_free (
    type(c_ptr), value v )
```

49.2.1.21 fgsl_aux_vector_int_init()

```
type(c_ptr) function fgsl_aux_vector_int_init
```

49.2.1.22 fgsl_aux_vector_int_size()

```
integer(c_size_t) function fgsl_aux_vector_int_size (
    type(c_ptr), value fvec )
```

49.2.1.23 fgsl_aux_vector_int_stride()

```
integer(c_size_t) function fgsl_aux_vector_int_stride (
    type(c_ptr), value fvec )
```

49.2.1.24 gsl_aux_sizeof_matrix()

```
integer(c_size_t) function gsl_aux_sizeof_matrix
```

49.2.1.25 gsl_aux_sizeof_matrix_complex()

```
integer(c_size_t) function gsl_aux_sizeof_matrix_complex
```

49.2.1.26 gsl_aux_sizeof_vector()

```
integer(c_size_t) function gsl_aux_sizeof_vector
```

49.2.1.27 `gsl_aux_sizeof_vector_complex()`

```
integer(c_size_t) function gsl_aux_sizeof_vector_complex
```

49.2.1.28 `gsl_matrix_complex_get()`

```
type(gsl_complex) function gsl_matrix_complex_get (
    type(c_ptr), value v,
    integer(c_size_t), value j,
    integer(c_size_t), value i )
```

49.2.1.29 `gsl_matrix_complex_ptr()`

```
type(c_ptr) function gsl_matrix_complex_ptr (
    type(c_ptr), value m,
    integer(c_size_t), value i,
    integer(c_size_t), value j )
```

49.2.1.30 `gsl_matrix_get()`

```
real(c_double) function gsl_matrix_get (
    type(c_ptr), value v,
    integer(c_size_t), value j,
    integer(c_size_t), value i )
```

49.2.1.31 `gsl_matrix_ptr()`

```
type(c_ptr) function gsl_matrix_ptr (
    type(c_ptr), value m,
    integer(c_size_t), value i,
    integer(c_size_t), value j )
```

49.2.1.32 `gsl_vector_complex_get()`

```
type(gsl_complex) function gsl_vector_complex_get (
    type(c_ptr), value v,
    integer(c_size_t), value i )
```

49.2.1.33 `gsl_vector_complex_ptr()`

```
type(c_ptr) function gsl_vector_complex_ptr (  
    type(c_ptr), value v,  
    integer(c_size_t), value i )
```

49.2.1.34 `gsl_vector_get()`

```
real(c_double) function gsl_vector_get (  
    type(c_ptr), value v,  
    integer(c_size_t), value i )
```

49.2.1.35 `gsl_vector_int_ptr()`

```
type(c_ptr) function gsl_vector_int_ptr (  
    type(c_ptr), value v,  
    integer(c_size_t), value i )
```

49.2.1.36 `gsl_vector_ptr()`

```
type(c_ptr) function gsl_vector_ptr (  
    type(c_ptr), value v,  
    integer(c_size_t), value i )
```

49.3 `api/bspline.finc` File Reference

Functions/Subroutines

- `type(fgsl_bspline_workspace)` function [fgsl_bspline_alloc](#) (k, nbreak)
- subroutine [fgsl_bspline_free](#) (w)
- `integer(fgsl_int)` function [fgsl_bspline_knots](#) (breakpts, w)
- `integer(fgsl_int)` function [fgsl_bspline_knots_uniform](#) (a, b, w)
- `integer(fgsl_int)` function [fgsl_bspline_eval](#) (x, b, w)
- `integer(fgsl_int)` function [fgsl_bspline_eval_nonzero](#) (x, bk, istart, iend, w)
- `integer(fgsl_int)` function [fgsl_bspline_deriv_eval](#) (x, nderiv, db, w)
- `integer(fgsl_int)` function [fgsl_bspline_deriv_eval_nonzero](#) (x, nderiv, db, istart, iend, w)
- `integer(fgsl_size_t)` function [fgsl_bspline_ncoeffs](#) (w)
- `real(fgsl_double)` function [fgsl_bspline_greville_abcissa](#) (i, w)
- `integer(fgsl_int)` function [fgsl_bspline_knots_greville](#) (abscissae, w, abserr)

49.3.1 Function/Subroutine Documentation

49.3.1.1 fgsl_bspline_alloc()

```
type(fgsl_bspline_workspace) function fgsl_bspline_alloc (
    integer(fgsl_size_t), intent(in) k,
    integer(fgsl_size_t), intent(in) nbreak )
```

49.3.1.2 fgsl_bspline_deriv_eval()

```
integer(fgsl_int) function fgsl_bspline_deriv_eval (
    real(fgsl_double), intent(in) x,
    integer(fgsl_size_t), intent(in) nderiv,
    type(fgsl_matrix), intent(inout) db,
    type(fgsl_bspline_workspace), intent(inout) w )
```

49.3.1.3 fgsl_bspline_deriv_eval_nonzero()

```
integer(fgsl_int) function fgsl_bspline_deriv_eval_nonzero (
    real(fgsl_double), intent(in) x,
    integer(fgsl_size_t), intent(in) nderiv,
    type(fgsl_matrix), intent(inout) db,
    integer(fgsl_size_t), intent(inout) istart,
    integer(fgsl_size_t), intent(inout) iend,
    type(fgsl_bspline_workspace), intent(inout) w )
```

49.3.1.4 fgsl_bspline_eval()

```
integer(fgsl_int) function fgsl_bspline_eval (
    real(fgsl_double), intent(in) x,
    type(fgsl_vector), intent(inout) b,
    type(fgsl_bspline_workspace), intent(inout) w )
```

49.3.1.5 fgsl_bspline_eval_nonzero()

```
integer(fgsl_int) function fgsl_bspline_eval_nonzero (
    real(fgsl_double), intent(in) x,
    type(fgsl_vector), intent(inout) bk,
    integer(fgsl_size_t), intent(inout) istart,
    integer(fgsl_size_t), intent(inout) iend,
    type(fgsl_bspline_workspace), intent(inout) w )
```


49.3.1.6 fgsl_bspline_free()

```
subroutine fgsl_bspline_free (  
    type(fgsl_bspline_workspace), intent(inout) w )
```

49.3.1.7 fgsl_bspline_greville_abscissa()

```
real(fgsl_double) function fgsl_bspline_greville_abscissa (  
    integer(fgsl_size_t) i,  
    type(fgsl_bspline_workspace), intent(in) w )
```

49.3.1.8 fgsl_bspline_knots()

```
integer(fgsl_int) function fgsl_bspline_knots (  
    type(fgsl_vector), intent(in) breakpts,  
    type(fgsl_bspline_workspace), intent(inout) w )
```

49.3.1.9 fgsl_bspline_knots_greville()

```
integer(fgsl_int) function fgsl_bspline_knots_greville (  
    type(fgsl_vector) abscissae,  
    type(fgsl_bspline_workspace) w,  
    real(fgsl_double), intent(out) abserr )
```

49.3.1.10 fgsl_bspline_knots_uniform()

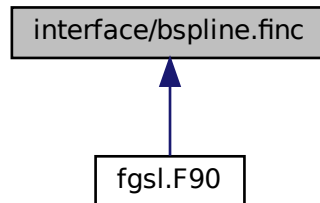
```
integer(fgsl_int) function fgsl_bspline_knots_uniform (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    type(fgsl_bspline_workspace), intent(inout) w )
```

49.3.1.11 fgsl_bspline_ncoeffs()

```
integer(fgsl_size_t) function fgsl_bspline_ncoeffs (  
    type(fgsl_bspline_workspace), intent(inout) w )
```

49.4 interface/bspline.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_bspline_alloc](#) (k, nbreak)
- subroutine [gsl_bspline_free](#) (w)
- integer(c_int) function [gsl_bspline_knots](#) (breakpts, w)
- integer(c_int) function [gsl_bspline_knots_uniform](#) (a, b, w)
- integer(c_int) function [gsl_bspline_eval](#) (x, b, w)
- integer(c_int) function [gsl_bspline_eval_nonzero](#) (x, b, istart, iend, w)
- integer(c_int) function [gsl_bspline_deriv_eval](#) (x, nderiv, db, w)
- integer(c_int) function [gsl_bspline_deriv_eval_nonzero](#) (x, nderiv, db, istart, iend, w)
- integer(c_size_t) function [gsl_bspline_ncoeffs](#) (w)
- real(c_double) function [gsl_bspline_greville_abscissa](#) (i, w)
- integer(c_int) function [gsl_bspline_knots_greville](#) (abscissae, w, abserr)

49.4.1 Function/Subroutine Documentation

49.4.1.1 [gsl_bspline_alloc\(\)](#)

```

type(c_ptr) function gsl_bspline_alloc (
    integer(c_size_t), value k,
    integer(c_size_t), value nbreak )
  
```

49.4.1.2 [gsl_bspline_deriv_eval\(\)](#)

```

integer(c_int) function gsl_bspline_deriv_eval (
    real(c_double), value x,
    integer(c_size_t), value nderiv,
    type(c_ptr), value db,
    type(c_ptr), value w )
  
```

49.4.1.3 `gsl_bspline_deriv_eval_nonzero()`

```
integer(c_int) function gsl_bspline_deriv_eval_nonzero (  
    real(c_double), value x,  
    integer(c_size_t), value nderiv,  
    type(c_ptr), value db,  
    integer(c_size_t) istart,  
    integer(c_size_t) iend,  
    type(c_ptr), value w )
```

49.4.1.4 `gsl_bspline_eval()`

```
integer(c_int) function gsl_bspline_eval (  
    real(c_double), value x,  
    type(c_ptr), value b,  
    type(c_ptr), value w )
```

49.4.1.5 `gsl_bspline_eval_nonzero()`

```
integer(c_int) function gsl_bspline_eval_nonzero (  
    real(c_double), value x,  
    type(c_ptr), value b,  
    integer(c_size_t) istart,  
    integer(c_size_t) iend,  
    type(c_ptr), value w )
```

49.4.1.6 `gsl_bspline_free()`

```
subroutine gsl_bspline_free (  
    type(c_ptr), value w )
```

49.4.1.7 `gsl_bspline_greville_abscissa()`

```
real(c_double) function gsl_bspline_greville_abscissa (  
    integer(c_size_t) i,  
    type(c_ptr), value w )
```

49.4.1.8 `gsl_bspline_knots()`

```
integer(c_int) function gsl_bspline_knots (
    type(c_ptr), value breakpts,
    type(c_ptr), value w )
```

49.4.1.9 `gsl_bspline_knots_greville()`

```
integer(c_int) function gsl_bspline_knots_greville (
    type(c_ptr), value abscissae,
    type(c_ptr), value w,
    real(c_double) abserr )
```

49.4.1.10 `gsl_bspline_knots_uniform()`

```
integer(c_int) function gsl_bspline_knots_uniform (
    real(c_double), value a,
    real(c_double), value b,
    type(c_ptr), value w )
```

49.4.1.11 `gsl_bspline_ncoeffs()`

```
integer(c_size_t) function gsl_bspline_ncoeffs (
    type(c_ptr), value w )
```

49.5 `api/chebyshev.finc` File Reference

Functions/Subroutines

- `type(fgsl_cheb_series) function fgsl_cheb_alloc (n)`
- `subroutine fgsl_cheb_free (cs)`
- `integer(fgsl_int) function fgsl_cheb_init (cs, f, a, b)`
- `integer(fgsl_size_t) function fgsl_cheb_order (cs)`
- `integer(fgsl_size_t) function fgsl_cheb_size (cs)`
- `real(fgsl_double) function, dimension(:), pointer fgsl_cheb_coeffs (cs)`
- `real(fgsl_double) function fgsl_cheb_eval (cs, x)`
- `integer(fgsl_int) function fgsl_cheb_eval_err (cs, x, result, abserr)`
- `real(fgsl_double) function fgsl_cheb_eval_n (cs, order, x)`
- `integer(fgsl_int) function fgsl_cheb_eval_n_err (cs, order, x, result, abserr)`
- `integer(fgsl_int) function fgsl_cheb_calc_deriv (deriv, cs)`
- `integer(fgsl_int) function fgsl_cheb_calc_integ (integ, cs)`
- `logical function fgsl_cheb_series_status (cheb_series)`

49.5.1 Function/Subroutine Documentation

49.5.1.1 fgsl_cheb_alloc()

```
type(fgsl_cheb_series) function fgsl_cheb_alloc (
    integer(fgsl_int), intent(in) n )
```

49.5.1.2 fgsl_cheb_calc_deriv()

```
integer(fgsl_int) function fgsl_cheb_calc_deriv (
    type(fgsl_cheb_series), intent(inout) deriv,
    type(fgsl_cheb_series), intent(in) cs )
```

49.5.1.3 fgsl_cheb_calc_integ()

```
integer(fgsl_int) function fgsl_cheb_calc_integ (
    type(fgsl_cheb_series), intent(inout) integ,
    type(fgsl_cheb_series), intent(in) cs )
```

49.5.1.4 fgsl_cheb_coeffs()

```
real(fgsl_double) function, dimension(:), pointer fgsl_cheb_coeffs (
    type(fgsl_cheb_series), intent(in) cs )
```

49.5.1.5 fgsl_cheb_eval()

```
real(fgsl_double) function fgsl_cheb_eval (
    type(fgsl_cheb_series), intent(in) cs,
    real(fgsl_double), intent(in) x )
```

49.5.1.6 fgsl_cheb_eval_err()

```
integer(fgsl_int) function fgsl_cheb_eval_err (
    type(fgsl_cheb_series), intent(in) cs,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.5.1.7 fgsl_cheb_eval_n()

```
real(fgsl_double) function fgsl_cheb_eval_n (  
    type(fgsl_cheb_series), intent(in) cs,  
    integer(fgsl_size_t), intent(in) order,  
    real(fgsl_double), intent(in) x )
```

49.5.1.8 fgsl_cheb_eval_n_err()

```
integer(fgsl_int) function fgsl_cheb_eval_n_err (  
    type(fgsl_cheb_series), intent(in) cs,  
    integer(fgsl_size_t), intent(in) order,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(out) result,  
    real(fgsl_double), intent(out) abserr )
```

49.5.1.9 fgsl_cheb_free()

```
subroutine fgsl_cheb_free (  
    type(fgsl_cheb_series), intent(in) cs )
```

49.5.1.10 fgsl_cheb_init()

```
integer(fgsl_int) function fgsl_cheb_init (  
    type(fgsl_cheb_series), intent(inout) cs,  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.5.1.11 fgsl_cheb_order()

```
integer(fgsl_size_t) function fgsl_cheb_order (  
    type(fgsl_cheb_series), intent(in) cs )
```

49.5.1.12 fgsl_cheb_series_status()

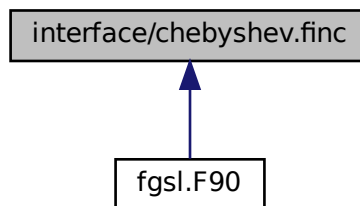
```
logical function fgsl_cheb_series_status (  
    type(fgsl_cheb_series), intent(in) cheb_series )
```

49.5.1.13 fgsl_cheb_size()

```
integer(fgsl_size_t) function fgsl_cheb_size (
    type(fgsl_cheb_series), intent(in) cs )
```

49.6 interface/chebyshev.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_cheb_alloc](#) (n)
- subroutine [gsl_cheb_free](#) (cs)
- integer(c_int) function [gsl_cheb_init](#) (cs, f, a, b)
- integer(c_size_t) function [gsl_cheb_order](#) (cs)
- integer(c_size_t) function [gsl_cheb_size](#) (cs)
- type(c_ptr) function [gsl_cheb_coeffs](#) (cs)
- real(c_double) function [gsl_cheb_eval](#) (cs, x)
- integer(c_int) function [gsl_cheb_eval_err](#) (cs, x, result, abserr)
- real(c_double) function [gsl_cheb_eval_n](#) (cs, order, x)
- integer(c_int) function [gsl_cheb_eval_n_err](#) (cs, order, x, result, abserr)
- integer(c_int) function [gsl_cheb_calc_deriv](#) (deriv, cs)
- integer(c_int) function [gsl_cheb_calc_integ](#) (integ, cs)

49.6.1 Function/Subroutine Documentation

49.6.1.1 gsl_cheb_alloc()

```
type(c_ptr) function gsl_cheb_alloc (
    integer(c_int), value n )
```

49.6.1.2 `gsl_cheb_calc_deriv()`

```
integer(c_int) function gsl_cheb_calc_deriv (  
    type(c_ptr), value deriv,  
    type(c_ptr), value cs )
```

49.6.1.3 `gsl_cheb_calc_integ()`

```
integer(c_int) function gsl_cheb_calc_integ (  
    type(c_ptr), value integ,  
    type(c_ptr), value cs )
```

49.6.1.4 `gsl_cheb_coeffs()`

```
type(c_ptr) function gsl_cheb_coeffs (  
    type(c_ptr), value cs )
```

49.6.1.5 `gsl_cheb_eval()`

```
real(c_double) function gsl_cheb_eval (  
    type(c_ptr), value cs,  
    real(c_double), value x )
```

49.6.1.6 `gsl_cheb_eval_err()`

```
integer(c_int) function gsl_cheb_eval_err (  
    type(c_ptr), value cs,  
    real(c_double), value x,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.6.1.7 `gsl_cheb_eval_n()`

```
real(c_double) function gsl_cheb_eval_n (  
    type(c_ptr), value cs,  
    integer(c_size_t), value order,  
    real(c_double), value x )
```


49.6.1.8 `gsl_cheb_eval_n_err()`

```
integer(c_int) function gsl_cheb_eval_n_err (  
    type(c_ptr), value cs,  
    integer(c_size_t), value order,  
    real(c_double), value x,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.6.1.9 `gsl_cheb_free()`

```
subroutine gsl_cheb_free (  
    type(c_ptr), value cs )
```

49.6.1.10 `gsl_cheb_init()`

```
integer(c_int) function gsl_cheb_init (  
    type(c_ptr), value cs,  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.6.1.11 `gsl_cheb_order()`

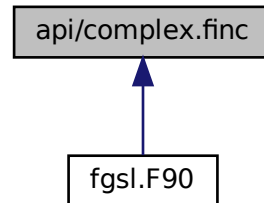
```
integer(c_size_t) function gsl_cheb_order (  
    type(c_ptr), value cs )
```

49.6.1.12 `gsl_cheb_size()`

```
integer(c_size_t) function gsl_cheb_size (  
    type(c_ptr), value cs )
```

49.7 api/complex.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- real(fgsl_double) function [fgsl_complex_arg](#) (z)
- real(fgsl_double) function [fgsl_complex_logabs](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_log10](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_log_b](#) (z, b)
- complex(fgsl_double_complex) function [fgsl_complex_arcsin](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arcsin_real](#) (r)
- complex(fgsl_double_complex) function [fgsl_complex_arccos](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arccos_real](#) (r)
- complex(fgsl_double_complex) function [fgsl_complex_arctan](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arcsec](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arcsec_real](#) (r)
- complex(fgsl_double_complex) function [fgsl_complex_arccsc](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arccsc_real](#) (r)
- complex(fgsl_double_complex) function [fgsl_complex_arccot](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arcsinh](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arccosh](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arccosh_real](#) (r)
- complex(fgsl_double_complex) function [fgsl_complex_arctanh](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arctanh_real](#) (r)
- complex(fgsl_double_complex) function [fgsl_complex_arcsech](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arccsch](#) (z)
- complex(fgsl_double_complex) function [fgsl_complex_arccoth](#) (z)
- elemental subroutine [fgsl_complex_to_complex](#) (result, source)
- elemental subroutine [complex_to_fgsl_complex](#) (result, source)

49.7.1 Function/Subroutine Documentation

49.7.1.1 complex_to_fgsl_complex()

```
elemental subroutine complex_to_fgsl_complex (
    type(gsl_complex), intent(out) result,
    complex(fgsl_double_complex), intent(in) source )
```

49.7.1.2 fgsl_complex_arccos()

```
complex(fgsl_double_complex) function fgsl_complex_arccos (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.3 fgsl_complex_arccos_real()

```
complex(fgsl_double_complex) function fgsl_complex_arccos_real (
    real(fgsl_double), intent(in) r )
```

49.7.1.4 fgsl_complex_arccosh()

```
complex(fgsl_double_complex) function fgsl_complex_arccosh (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.5 fgsl_complex_arccosh_real()

```
complex(fgsl_double_complex) function fgsl_complex_arccosh_real (
    real(fgsl_double), intent(in) r )
```

49.7.1.6 fgsl_complex_arccot()

```
complex(fgsl_double_complex) function fgsl_complex_arccot (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.7 fgsl_complex_arccoth()

```
complex(fgsl_double_complex) function fgsl_complex_arccoth (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.8 fgsl_complex_arccsc()

```
complex(fgsl_double_complex) function fgsl_complex_arccsc (  
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.9 fgsl_complex_arccsc_real()

```
complex(fgsl_double_complex) function fgsl_complex_arccsc_real (  
    real(fgsl_double), intent(in) r )
```

49.7.1.10 fgsl_complex_arccsch()

```
complex(fgsl_double_complex) function fgsl_complex_arccsch (  
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.11 fgsl_complex_arcsec()

```
complex(fgsl_double_complex) function fgsl_complex_arcsec (  
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.12 fgsl_complex_arcsec_real()

```
complex(fgsl_double_complex) function fgsl_complex_arcsec_real (  
    real(fgsl_double), intent(in) r )
```

49.7.1.13 fgsl_complex_arcsech()

```
complex(fgsl_double_complex) function fgsl_complex_arcsech (  
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.14 fgsl_complex_arcsin()

```
complex(fgsl_double_complex) function fgsl_complex_arcsin (  
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.15 fgsl_complex_arcsin_real()

```
complex(fgsl_double_complex) function fgsl_complex_arcsin_real (
    real(fgsl_double), intent(in) r )
```

49.7.1.16 fgsl_complex_arcsinh()

```
complex(fgsl_double_complex) function fgsl_complex_arcsinh (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.17 fgsl_complex_arctan()

```
complex(fgsl_double_complex) function fgsl_complex_arctan (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.18 fgsl_complex_arctanh()

```
complex(fgsl_double_complex) function fgsl_complex_arctanh (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.19 fgsl_complex_arctanh_real()

```
complex(fgsl_double_complex) function fgsl_complex_arctanh_real (
    real(fgsl_double), intent(in) r )
```

49.7.1.20 fgsl_complex_arg()

```
real(fgsl_double) function fgsl_complex_arg (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.21 fgsl_complex_log10()

```
complex(fgsl_double_complex) function fgsl_complex_log10 (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.22 fgsl_complex_log_b()

```
complex(fgsl_double_complex) function fgsl_complex_log_b (
    complex(fgsl_double_complex), intent(in) z,
    complex(fgsl_double_complex), intent(in) b )
```

49.7.1.23 fgsl_complex_logabs()

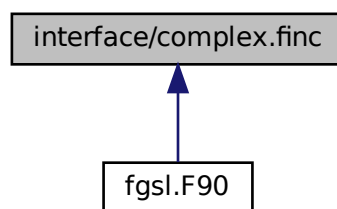
```
real(fgsl_double) function fgsl_complex_logabs (
    complex(fgsl_double_complex), intent(in) z )
```

49.7.1.24 fgsl_complex_to_complex()

```
elemental subroutine fgsl_complex_to_complex (
    complex(fgsl_double_complex), intent(out) result,
    type(gsl_complex), intent(in) source )
```

49.8 interface/complex.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- real(c_double) function [gsl_complex_arg](#) (z)
- real(c_double) function [gsl_complex_logabs](#) (z)
- type(gsl_complex) function [gsl_complex_log10](#) (z)
- type(gsl_complex) function [gsl_complex_log_b](#) (z, b)
- type(gsl_complex) function [gsl_complex_arcsin](#) (z)
- type(gsl_complex) function [gsl_complex_arcsin_real](#) (r)
- type(gsl_complex) function [gsl_complex_arccos](#) (z)
- type(gsl_complex) function [gsl_complex_arccos_real](#) (r)

- type(gsl_complex) function [gsl_complex_arctan](#) (z)
- type(gsl_complex) function [gsl_complex_arcsec](#) (z)
- type(gsl_complex) function [gsl_complex_arcsec_real](#) (r)
- type(gsl_complex) function [gsl_complex_arccsc](#) (z)
- type(gsl_complex) function [gsl_complex_arccsc_real](#) (r)
- type(gsl_complex) function [gsl_complex_arccot](#) (z)
- type(gsl_complex) function [gsl_complex_arcsinh](#) (z)
- type(gsl_complex) function [gsl_complex_arccosh](#) (z)
- type(gsl_complex) function [gsl_complex_arccosh_real](#) (r)
- type(gsl_complex) function [gsl_complex_arctanh](#) (z)
- type(gsl_complex) function [gsl_complex_arctanh_real](#) (r)
- type(gsl_complex) function [gsl_complex_arcsech](#) (z)
- type(gsl_complex) function [gsl_complex_arccsch](#) (z)
- type(gsl_complex) function [gsl_complex_arccoth](#) (z)

49.8.1 Function/Subroutine Documentation

49.8.1.1 [gsl_complex_arccos\(\)](#)

```
type(gsl_complex) function gsl_complex_arccos (  
    type(gsl_complex), value z )
```

49.8.1.2 [gsl_complex_arccos_real\(\)](#)

```
type(gsl_complex) function gsl_complex_arccos_real (  
    real(c_double), value r )
```

49.8.1.3 [gsl_complex_arccosh\(\)](#)

```
type(gsl_complex) function gsl_complex_arccosh (  
    type(gsl_complex), value z )
```

49.8.1.4 [gsl_complex_arccosh_real\(\)](#)

```
type(gsl_complex) function gsl_complex_arccosh_real (  
    real(c_double), value r )
```

49.8.1.5 `gsl_complex_arccot()`

```
type(gsl_complex) function gsl_complex_arccot (  
    type(gsl_complex), value z )
```

49.8.1.6 `gsl_complex_arccoth()`

```
type(gsl_complex) function gsl_complex_arccoth (  
    type(gsl_complex), value z )
```

49.8.1.7 `gsl_complex_arccsc()`

```
type(gsl_complex) function gsl_complex_arccsc (  
    type(gsl_complex), value z )
```

49.8.1.8 `gsl_complex_arccsc_real()`

```
type(gsl_complex) function gsl_complex_arccsc_real (  
    real(c_double), value r )
```

49.8.1.9 `gsl_complex_arccsch()`

```
type(gsl_complex) function gsl_complex_arccsch (  
    type(gsl_complex), value z )
```

49.8.1.10 `gsl_complex_arcsec()`

```
type(gsl_complex) function gsl_complex_arcsec (  
    type(gsl_complex), value z )
```

49.8.1.11 `gsl_complex_arcsec_real()`

```
type(gsl_complex) function gsl_complex_arcsec_real (  
    real(c_double), value r )
```


49.8.1.12 gsl_complex_arcsech()

```
type(gsl_complex) function gsl_complex_arcsech (  
    type(gsl_complex), value z )
```

49.8.1.13 gsl_complex_arcsin()

```
type(gsl_complex) function gsl_complex_arcsin (  
    type(gsl_complex), value z )
```

49.8.1.14 gsl_complex_arcsin_real()

```
type(gsl_complex) function gsl_complex_arcsin_real (  
    real(c_double), value r )
```

49.8.1.15 gsl_complex_arcsinh()

```
type(gsl_complex) function gsl_complex_arcsinh (  
    type(gsl_complex), value z )
```

49.8.1.16 gsl_complex_arctan()

```
type(gsl_complex) function gsl_complex_arctan (  
    type(gsl_complex), value z )
```

49.8.1.17 gsl_complex_arctanh()

```
type(gsl_complex) function gsl_complex_arctanh (  
    type(gsl_complex), value z )
```

49.8.1.18 gsl_complex_arctanh_real()

```
type(gsl_complex) function gsl_complex_arctanh_real (  
    real(c_double), value r )
```

49.8.1.19 `gsl_complex_arg()`

```
real(c_double) function gsl_complex_arg (
    type(gsl_complex), value z )
```

49.8.1.20 `gsl_complex_log10()`

```
type(gsl_complex) function gsl_complex_log10 (
    type(gsl_complex), value z )
```

49.8.1.21 `gsl_complex_log_b()`

```
type(gsl_complex) function gsl_complex_log_b (
    type(gsl_complex), value z,
    type(gsl_complex), value b )
```

49.8.1.22 `gsl_complex_logabs()`

```
real(c_double) function gsl_complex_logabs (
    type(gsl_complex), value z )
```

49.9 `api/deriv.finc` File Reference

Functions/Subroutines

- integer(`fgsl_int`) function [fgsl_deriv_central](#) (`f`, `x`, `h`, `result`, `abserr`)
- integer(`fgsl_int`) function [fgsl_deriv_forward](#) (`f`, `x`, `h`, `result`, `abserr`)
- integer(`fgsl_int`) function [fgsl_deriv_backward](#) (`f`, `x`, `h`, `result`, `abserr`)

49.9.1 Function/Subroutine Documentation

49.9.1.1 `fgsl_deriv_backward()`

```
integer(fgsl_int) function fgsl_deriv_backward (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) h,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.9.1.2 fgsl_deriv_central()

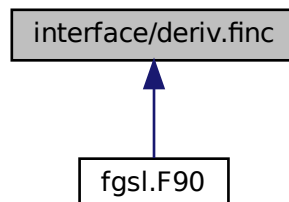
```
integer(fgsl_int) function fgsl_deriv_central (  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) h,  
    real(fgsl_double), intent(out) result,  
    real(fgsl_double), intent(out) abserr )
```

49.9.1.3 fgsl_deriv_forward()

```
integer(fgsl_int) function fgsl_deriv_forward (  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) h,  
    real(fgsl_double), intent(out) result,  
    real(fgsl_double), intent(out) abserr )
```

49.10 interface/deriv.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- integer(c_int) function [gsl_deriv_central](#) (f, x, h, result, abserr)
- integer(c_int) function [gsl_deriv_forward](#) (f, x, h, result, abserr)
- integer(c_int) function [gsl_deriv_backward](#) (f, x, h, result, abserr)

49.10.1 Function/Subroutine Documentation

49.10.1.1 `gsl_deriv_backward()`

```
integer(c_int) function gsl_deriv_backward (
    type(c_ptr), value f,
    real(c_double), value x,
    real(c_double), value h,
    real(c_double), intent(out) result,
    real(c_double), intent(out) abserr )
```

49.10.1.2 `gsl_deriv_central()`

```
integer(c_int) function gsl_deriv_central (
    type(c_ptr), value f,
    real(c_double), value x,
    real(c_double), value h,
    real(c_double), intent(out) result,
    real(c_double), intent(out) abserr )
```

49.10.1.3 `gsl_deriv_forward()`

```
integer(c_int) function gsl_deriv_forward (
    type(c_ptr), value f,
    real(c_double), value x,
    real(c_double), value h,
    real(c_double), intent(out) result,
    real(c_double), intent(out) abserr )
```

49.11 `api/dht.finc` File Reference

Functions/Subroutines

- type(`fgsl_dht`) function [fgsl_dht_alloc](#) (size)
- integer(`fgsl_int`) function [fgsl_dht_init](#) (t, nu, xmax)
- type(`fgsl_dht`) function [fgsl_dht_new](#) (size, nu, xmax)
- subroutine [fgsl_dht_free](#) (t)
- integer(`fgsl_int`) function [fgsl_dht_apply](#) (t, f_in, f_out)
- real(`fgsl_double`) function [fgsl_dht_x_sample](#) (t, n)
- real(`fgsl_double`) function [fgsl_dht_k_sample](#) (t, n)
- logical function [fgsl_dht_status](#) (dht)

49.11.1 Function/Subroutine Documentation

49.11.1.1 fgsl_dht_alloc()

```
type(fgsl_dht) function fgsl_dht_alloc (  
    integer(fgsl_size_t), intent(in) size )
```

49.11.1.2 fgsl_dht_apply()

```
integer(fgsl_int) function fgsl_dht_apply (  
    type(fgsl_dht), intent(in) t,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous f_in,  
    real(fgsl_double), dimension(:), intent(out), target, contiguous f_out )
```

49.11.1.3 fgsl_dht_free()

```
subroutine fgsl_dht_free (  
    type(fgsl_dht), intent(inout) t )
```

49.11.1.4 fgsl_dht_init()

```
integer(fgsl_int) function fgsl_dht_init (  
    type(fgsl_dht), intent(inout) t,  
    real(fgsl_double), intent(in) nu,  
    real(fgsl_double), intent(in) xmax )
```

49.11.1.5 fgsl_dht_k_sample()

```
real(fgsl_double) function fgsl_dht_k_sample (  
    type(fgsl_dht), intent(in) t,  
    integer(fgsl_int), intent(in) n )
```

49.11.1.6 fgsl_dht_new()

```
type(fgsl_dht) function fgsl_dht_new (  
    integer(fgsl_size_t), intent(in) size,  
    real(fgsl_double), intent(in) nu,  
    real(fgsl_double), intent(in) xmax )
```

49.11.1.7 fgsl_dht_status()

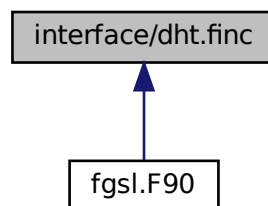
```
logical function fgsl_dht_status (  
    type(fgsl_dht), intent(in) dht )
```

49.11.1.8 fgsl_dht_x_sample()

```
real(fgsl_double) function fgsl_dht_x_sample (  
    type(fgsl_dht), intent(in) t,  
    integer(fgsl_int), intent(in) n )
```

49.12 interface/dht.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_dht_alloc](#) (size)
- integer(c_int) function [gsl_dht_init](#) (t, nu, xmax)
- type(c_ptr) function [gsl_dht_new](#) (size, nu, xmax)
- subroutine [gsl_dht_free](#) (t)
- integer(c_int) function [gsl_dht_apply](#) (t, f_in, f_out)
- real(c_double) function [gsl_dht_x_sample](#) (t, n)
- real(c_double) function [gsl_dht_k_sample](#) (t, n)

49.12.1 Function/Subroutine Documentation

49.12.1.1 `gsl_dht_alloc()`

```
type(c_ptr) function gsl_dht_alloc (
    integer(c_size_t), value size )
```

49.12.1.2 `gsl_dht_apply()`

```
integer(c_int) function gsl_dht_apply (
    type(c_ptr), value t,
    type(c_ptr), value f_in,
    type(c_ptr), value f_out )
```

49.12.1.3 `gsl_dht_free()`

```
subroutine gsl_dht_free (
    type(c_ptr), value t )
```

49.12.1.4 `gsl_dht_init()`

```
integer(c_int) function gsl_dht_init (
    type(c_ptr), value t,
    real(c_double), value nu,
    real(c_double), value xmax )
```

49.12.1.5 `gsl_dht_k_sample()`

```
real(c_double) function gsl_dht_k_sample (
    type(c_ptr), value t,
    integer(c_int), value n )
```

49.12.1.6 `gsl_dht_new()`

```
type(c_ptr) function gsl_dht_new (
    integer(c_size_t), value size,
    real(c_double), value nu,
    real(c_double), value xmax )
```

49.12.1.7 gsl_dht_x_sample()

```
real(c_double) function gsl_dht_x_sample (
    type(c_ptr), value t,
    integer(c_int), value n )
```

49.13 api/eigen.finc File Reference

Functions/Subroutines

- type(fgsl_eigen_symm_workspace) function [fgsl_eigen_symm_alloc](#) (n)
- subroutine [fgsl_eigen_symm_free](#) (w)
- integer(fgsl_int) function [fgsl_eigen_symm](#) (a, eval, w)
- type(fgsl_eigen_symmv_workspace) function [fgsl_eigen_symmv_alloc](#) (n)
- subroutine [fgsl_eigen_symmv_free](#) (w)
- integer(fgsl_int) function [fgsl_eigen_symmv](#) (a, eval, evec, w)
- type(fgsl_eigen_herm_workspace) function [fgsl_eigen_herm_alloc](#) (n)
- subroutine [fgsl_eigen_herm_free](#) (w)
- integer(fgsl_int) function [fgsl_eigen_herm](#) (a, eval, w)
- type(fgsl_eigen_hermv_workspace) function [fgsl_eigen_hermv_alloc](#) (n)
- subroutine [fgsl_eigen_hermv_free](#) (w)
- integer(fgsl_int) function [fgsl_eigen_hermv](#) (a, eval, evec, w)
- type(fgsl_eigen_nonsymm_workspace) function [fgsl_eigen_nonsymm_alloc](#) (n)
- subroutine [fgsl_eigen_nonsymm_free](#) (w)
- subroutine [fgsl_eigen_nonsymm_params](#) (compute_t, balance, w)
- integer(fgsl_int) function [fgsl_eigen_nonsymm](#) (a, eval, w)
- integer(fgsl_int) function [fgsl_eigen_nonsymm_z](#) (a, eval, z, w)
- type(fgsl_eigen_nonsymmv_workspace) function [fgsl_eigen_nonsymmv_alloc](#) (n)
- subroutine [fgsl_eigen_nonsymmv_free](#) (w)
- subroutine [fgsl_eigen_nonsymmv_params](#) (balance, w)
- integer(fgsl_int) function [fgsl_eigen_nonsymmv](#) (a, eval, evec, w)
- integer(fgsl_int) function [fgsl_eigen_nonsymmv_z](#) (a, eval, evec, z, w)
- type(fgsl_eigen_gensymm_workspace) function [fgsl_eigen_gensymm_alloc](#) (n)
- subroutine [fgsl_eigen_gensymm_free](#) (w)
- integer(fgsl_int) function [fgsl_eigen_gensymm](#) (a, b, eval, w)
- type(fgsl_eigen_gensymmv_workspace) function [fgsl_eigen_gensymmv_alloc](#) (n)
- subroutine [fgsl_eigen_gensymmv_free](#) (w)
- integer(fgsl_int) function [fgsl_eigen_gensymmv](#) (a, b, eval, evec, w)
- type(fgsl_eigen_genherm_workspace) function [fgsl_eigen_genherm_alloc](#) (n)
- subroutine [fgsl_eigen_genherm_free](#) (w)
- integer(fgsl_int) function [fgsl_eigen_genherm](#) (a, b, eval, w)
- type(fgsl_eigen_genhermv_workspace) function [fgsl_eigen_genhermv_alloc](#) (n)
- subroutine [fgsl_eigen_genhermv_free](#) (w)
- integer(fgsl_int) function [fgsl_eigen_genhermv](#) (a, b, eval, evec, w)
- type(fgsl_eigen_gen_workspace) function [fgsl_eigen_gen_alloc](#) (n)
- subroutine [fgsl_eigen_gen_free](#) (w)
- subroutine [fgsl_eigen_gen_params](#) (compute_s, compute_t, balance, w)
- integer(fgsl_int) function [fgsl_eigen_gen](#) (a, b, alpha, beta, w)
- integer(fgsl_int) function [fgsl_eigen_gen_qz](#) (a, b, alpha, beta, q, z, w)
- type(fgsl_eigen_genv_workspace) function [fgsl_eigen_genv_alloc](#) (n)
- subroutine [fgsl_eigen_genv_free](#) (w)
- integer(fgsl_int) function [fgsl_eigen_genv](#) (a, b, alpha, beta, evec, w)

- integer(fgsl_int) function [fgsl_eigen_genv_qz](#) (a, b, alpha, beta, evec, q, z, w)
- integer(fgsl_int) function [fgsl_eigen_symmv_sort](#) (eval, evec, sort_type)
- integer(fgsl_int) function [fgsl_eigen_hermv_sort](#) (eval, evec, sort_type)
- integer(fgsl_int) function [fgsl_eigen_nonsymmv_sort](#) (eval, evec, sort_type)
- integer(fgsl_int) function [fgsl_eigen_gensymmv_sort](#) (eval, evec, sort_type)
- integer(fgsl_int) function [fgsl_eigen_genhermv_sort](#) (eval, evec, sort_type)
- integer(fgsl_int) function [fgsl_eigen_genv_sort](#) (alpha, beta, evec, sort_type)

49.13.1 Function/Subroutine Documentation

49.13.1.1 fgsl_eigen_gen()

```
integer(fgsl_int) function fgsl_eigen_gen (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_matrix), intent(inout) b,
    type(fgsl_vector_complex), intent(inout) alpha,
    type(fgsl_vector), intent(inout) beta,
    type(fgsl_eigen_gen_workspace) w )
```

49.13.1.2 fgsl_eigen_gen_alloc()

```
type(fgsl_eigen_gen_workspace) function fgsl_eigen_gen_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.3 fgsl_eigen_gen_free()

```
subroutine fgsl_eigen_gen_free (
    type(fgsl_eigen_gen_workspace) w )
```

49.13.1.4 fgsl_eigen_gen_params()

```
subroutine fgsl_eigen_gen_params (
    integer(fgsl_int), intent(in) compute_s,
    integer(fgsl_int), intent(in) compute_t,
    integer(fgsl_int), intent(in) balance,
    type(fgsl_eigen_gen_workspace), intent(inout) w )
```

49.13.1.5 fgsl_eigen_gen_qz()

```
integer(fgsl_int) function fgsl_eigen_gen_qz (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_matrix), intent(inout) b,
    type(fgsl_vector_complex), intent(inout) alpha,
    type(fgsl_vector), intent(inout) beta,
    type(fgsl_matrix), intent(inout) q,
    type(fgsl_matrix), intent(inout) z,
    type(fgsl_eigen_gen_workspace) w )
```

49.13.1.6 fgsl_eigen_genherm()

```
integer(fgsl_int) function fgsl_eigen_genherm (
    type(fgsl_matrix_complex), intent(inout) a,
    type(fgsl_matrix_complex), intent(inout) b,
    type(fgsl_vector), intent(inout) eval,
    type(fgsl_eigen_genherm_workspace) w )
```

49.13.1.7 fgsl_eigen_genherm_alloc()

```
type(fgsl_eigen_genherm_workspace) function fgsl_eigen_genherm_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.8 fgsl_eigen_genherm_free()

```
subroutine fgsl_eigen_genherm_free (
    type(fgsl_eigen_genherm_workspace) w )
```

49.13.1.9 fgsl_eigen_genhermv()

```
integer(fgsl_int) function fgsl_eigen_genhermv (
    type(fgsl_matrix_complex), intent(inout) a,
    type(fgsl_matrix_complex), intent(inout) b,
    type(fgsl_vector), intent(inout) eval,
    type(fgsl_matrix_complex), intent(inout) evec,
    type(fgsl_eigen_genhermv_workspace) w )
```

49.13.1.10 fgsl_eigen_genhermv_alloc()

```
type(fgsl_eigen_genhermv_workspace) function fgsl_eigen_genhermv_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.11 fgsl_eigen_genhermv_free()

```
subroutine fgsl_eigen_genhermv_free (
    type(fgsl_eigen_genhermv_workspace) w )
```

49.13.1.12 fgsl_eigen_genhermv_sort()

```
integer(fgsl_int) function fgsl_eigen_genhermv_sort (
    type(fgsl_vector), intent(inout) eval,
    type(fgsl_matrix_complex), intent(inout) evec,
    integer(fgsl_int), intent(in) sort_type )
```

49.13.1.13 fgsl_eigen_gensymm()

```
integer(fgsl_int) function fgsl_eigen_gensymm (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_matrix), intent(inout) b,
    type(fgsl_vector), intent(inout) eval,
    type(fgsl_eigen_gensymm_workspace) w )
```

49.13.1.14 fgsl_eigen_gensymm_alloc()

```
type(fgsl_eigen_gensymm_workspace) function fgsl_eigen_gensymm_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.15 fgsl_eigen_gensymm_free()

```
subroutine fgsl_eigen_gensymm_free (
    type(fgsl_eigen_gensymm_workspace) w )
```

49.13.1.16 fgsl_eigen_gensymmv()

```
integer(fgsl_int) function fgsl_eigen_gensymmv (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_matrix), intent(inout) b,  
    type(fgsl_vector), intent(inout) eval,  
    type(fgsl_matrix), intent(inout) evec,  
    type(fgsl_eigen_gensymmv_workspace) w )
```

49.13.1.17 fgsl_eigen_gensymmv_alloc()

```
type(fgsl_eigen_gensymmv_workspace) function fgsl_eigen_gensymmv_alloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.18 fgsl_eigen_gensymmv_free()

```
subroutine fgsl_eigen_gensymmv_free (  
    type(fgsl_eigen_gensymmv_workspace) w )
```

49.13.1.19 fgsl_eigen_gensymmv_sort()

```
integer(fgsl_int) function fgsl_eigen_gensymmv_sort (  
    type(fgsl_vector), intent(inout) eval,  
    type(fgsl_matrix), intent(inout) evec,  
    integer(fgsl_int), intent(in) sort_type )
```

49.13.1.20 fgsl_eigen_genv()

```
integer(fgsl_int) function fgsl_eigen_genv (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_matrix), intent(inout) b,  
    type(fgsl_vector_complex), intent(inout) alpha,  
    type(fgsl_vector), intent(inout) beta,  
    type(fgsl_matrix_complex), intent(inout) evec,  
    type(fgsl_eigen_genv_workspace) w )
```

49.13.1.21 fgsl_eigen_genv_alloc()

```
type(fgsl_eigen_genv_workspace) function fgsl_eigen_genv_alloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.22 fgsl_eigen_genv_free()

```
subroutine fgsl_eigen_genv_free (  
    type(fgsl_eigen_genv_workspace) w )
```

49.13.1.23 fgsl_eigen_genv_qz()

```
integer(fgsl_int) function fgsl_eigen_genv_qz (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_matrix), intent(inout) b,  
    type(fgsl_vector_complex), intent(inout) alpha,  
    type(fgsl_vector), intent(inout) beta,  
    type(fgsl_matrix_complex), intent(inout) evec,  
    type(fgsl_matrix), intent(inout) q,  
    type(fgsl_matrix), intent(inout) z,  
    type(fgsl_eigen_genv_workspace) w )
```

49.13.1.24 fgsl_eigen_genv_sort()

```
integer(fgsl_int) function fgsl_eigen_genv_sort (  
    type(fgsl_vector_complex), intent(inout) alpha,  
    type(fgsl_vector), intent(inout) beta,  
    type(fgsl_matrix_complex), intent(inout) evec,  
    integer(fgsl_int), intent(in) sort_type )
```

49.13.1.25 fgsl_eigen_herm()

```
integer(fgsl_int) function fgsl_eigen_herm (  
    type(fgsl_matrix_complex), intent(inout) a,  
    type(fgsl_vector), intent(inout) eval,  
    type(fgsl_eigen_herm_workspace) w )
```

49.13.1.26 fgsl_eigen_herm_alloc()

```
type(fgsl_eigen_herm_workspace) function fgsl_eigen_herm_alloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.27 fgsl_eigen_herm_free()

```
subroutine fgsl_eigen_herm_free (  
    type(fgsl_eigen_herm_workspace) w )
```

49.13.1.28 fgsl_eigen_hermv()

```
integer(fgsl_int) function fgsl_eigen_hermv (  
    type(fgsl_matrix_complex), intent(inout) a,  
    type(fgsl_vector), intent(inout) eval,  
    type(fgsl_matrix_complex), intent(inout) evec,  
    type(fgsl_eigen_hermv_workspace) w )
```

49.13.1.29 fgsl_eigen_hermv_alloc()

```
type(fgsl_eigen_hermv_workspace) function fgsl_eigen_hermv_alloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.30 fgsl_eigen_hermv_free()

```
subroutine fgsl_eigen_hermv_free (  
    type(fgsl_eigen_hermv_workspace) w )
```

49.13.1.31 fgsl_eigen_hermv_sort()

```
integer(fgsl_int) function fgsl_eigen_hermv_sort (  
    type(fgsl_vector), intent(inout) eval,  
    type(fgsl_matrix_complex), intent(inout) evec,  
    integer(fgsl_int), intent(in) sort_type )
```

49.13.1.32 fgsl_eigen_nonsymm()

```
integer(fgsl_int) function fgsl_eigen_nonsymm (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_vector_complex), intent(inout) eval,  
    type(fgsl_eigen_nonsymm_workspace) w )
```

49.13.1.33 fgsl_eigen_nonsymm_alloc()

```
type(fgsl_eigen_nonsymm_workspace) function fgsl_eigen_nonsymm_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.34 fgsl_eigen_nonsymm_free()

```
subroutine fgsl_eigen_nonsymm_free (
    type(fgsl_eigen_nonsymm_workspace) w )
```

49.13.1.35 fgsl_eigen_nonsymm_params()

```
subroutine fgsl_eigen_nonsymm_params (
    integer(fgsl_int), intent(in) compute_t,
    integer(fgsl_int), intent(in) balance,
    type(fgsl_eigen_nonsymm_workspace), intent(inout) w )
```

49.13.1.36 fgsl_eigen_nonsymm_z()

```
integer(fgsl_int) function fgsl_eigen_nonsymm_z (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector_complex), intent(inout) eval,
    type(fgsl_matrix), intent(inout) z,
    type(fgsl_eigen_nonsymm_workspace) w )
```

49.13.1.37 fgsl_eigen_nonsymmv()

```
integer(fgsl_int) function fgsl_eigen_nonsymmv (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector_complex), intent(inout) eval,
    type(fgsl_matrix_complex), intent(inout) evec,
    type(fgsl_eigen_nonsymmv_workspace) w )
```

49.13.1.38 fgsl_eigen_nonsymmv_alloc()

```
type(fgsl_eigen_nonsymmv_workspace) function fgsl_eigen_nonsymmv_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.39 fgsl_eigen_nonsymmv_free()

```
subroutine fgsl_eigen_nonsymmv_free (  
    type(fgsl_eigen_nonsymmv_workspace) w )
```

49.13.1.40 fgsl_eigen_nonsymmv_params()

```
subroutine fgsl_eigen_nonsymmv_params (  
    integer(fgsl_int), intent(in) balance,  
    type(fgsl_eigen_nonsymm_workspace), intent(inout) w )
```

49.13.1.41 fgsl_eigen_nonsymmv_sort()

```
integer(fgsl_int) function fgsl_eigen_nonsymmv_sort (  
    type(fgsl_vector_complex), intent(inout) eval,  
    type(fgsl_matrix_complex), intent(inout) evec,  
    integer(fgsl_int), intent(in) sort_type )
```

49.13.1.42 fgsl_eigen_nonsymmv_z()

```
integer(fgsl_int) function fgsl_eigen_nonsymmv_z (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_vector_complex), intent(inout) eval,  
    type(fgsl_matrix_complex), intent(inout) evec,  
    type(fgsl_matrix), intent(inout) z,  
    type(fgsl_eigen_nonsymmv_workspace) w )
```

49.13.1.43 fgsl_eigen_symm()

```
integer(fgsl_int) function fgsl_eigen_symm (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_vector), intent(inout) eval,  
    type(fgsl_eigen_symm_workspace) w )
```

49.13.1.44 fgsl_eigen_symm_alloc()

```
type(fgsl_eigen_symm_workspace) function fgsl_eigen_symm_alloc (  
    integer(fgsl_size_t), intent(in) n )
```


49.13.1.45 fgsl_eigen_symm_free()

```
subroutine fgsl_eigen_symm_free (  
    type(fgsl_eigen_symm_workspace) w )
```

49.13.1.46 fgsl_eigen_symmv()

```
integer(fgsl_int) function fgsl_eigen_symmv (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_vector), intent(inout) eval,  
    type(fgsl_matrix), intent(inout) evec,  
    type(fgsl_eigen_symmv_workspace) w )
```

49.13.1.47 fgsl_eigen_symmv_alloc()

```
type(fgsl_eigen_symmv_workspace) function fgsl_eigen_symmv_alloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.13.1.48 fgsl_eigen_symmv_free()

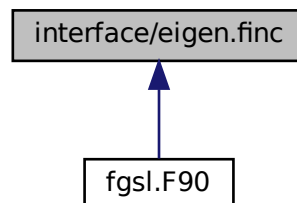
```
subroutine fgsl_eigen_symmv_free (  
    type(fgsl_eigen_symmv_workspace) w )
```

49.13.1.49 fgsl_eigen_symmv_sort()

```
integer(fgsl_int) function fgsl_eigen_symmv_sort (  
    type(fgsl_vector), intent(inout) eval,  
    type(fgsl_matrix), intent(inout) evec,  
    integer(fgsl_int), intent(in) sort_type )
```

49.14 interface/eigen.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_eigen_symm_alloc](#) (n)
- subroutine [gsl_eigen_symm_free](#) (w)
- integer(c_int) function [gsl_eigen_symm](#) (a, eval, w)
- type(c_ptr) function [gsl_eigen_symmv_alloc](#) (n)
- subroutine [gsl_eigen_symmv_free](#) (w)
- integer(c_int) function [gsl_eigen_symmv](#) (a, eval, evec, w)
- type(c_ptr) function [gsl_eigen_herm_alloc](#) (n)
- subroutine [gsl_eigen_herm_free](#) (w)
- integer(c_int) function [gsl_eigen_herm](#) (a, eval, w)
- type(c_ptr) function [gsl_eigen_hermv_alloc](#) (n)
- subroutine [gsl_eigen_hermv_free](#) (w)
- integer(c_int) function [gsl_eigen_hermv](#) (a, eval, evec, w)
- type(c_ptr) function [gsl_eigen_nonsymm_alloc](#) (n)
- subroutine [gsl_eigen_nonsymm_free](#) (w)
- subroutine [gsl_eigen_nonsymm_params](#) (compute_t, balance, w)
- integer(c_int) function [gsl_eigen_nonsymm](#) (a, eval, w)
- integer(c_int) function [gsl_eigen_nonsymm_z](#) (a, eval, z, w)
- type(c_ptr) function [gsl_eigen_nonsymmv_alloc](#) (n)
- subroutine [gsl_eigen_nonsymmv_free](#) (w)
- subroutine [gsl_eigen_nonsymmv_params](#) (balance, w)
- integer(c_int) function [gsl_eigen_nonsymmv](#) (a, eval, evec, w)
- integer(c_int) function [gsl_eigen_nonsymmv_z](#) (a, eval, evec, z, w)
- type(c_ptr) function [gsl_eigen_gensymm_alloc](#) (n)
- subroutine [gsl_eigen_gensymm_free](#) (w)
- integer(c_int) function [gsl_eigen_gensymm](#) (a, b, eval, w)
- type(c_ptr) function [gsl_eigen_gensymmv_alloc](#) (n)
- subroutine [gsl_eigen_gensymmv_free](#) (w)
- integer(c_int) function [gsl_eigen_gensymmv](#) (a, b, eval, evec, w)
- type(c_ptr) function [gsl_eigen_genherm_alloc](#) (n)
- subroutine [gsl_eigen_genherm_free](#) (w)
- integer(c_int) function [gsl_eigen_genherm](#) (a, b, eval, w)
- type(c_ptr) function [gsl_eigen_genhermv_alloc](#) (n)
- subroutine [gsl_eigen_genhermv_free](#) (w)
- integer(c_int) function [gsl_eigen_genhermv](#) (a, b, eval, evec, w)
- type(c_ptr) function [gsl_eigen_gen_alloc](#) (n)
- subroutine [gsl_eigen_gen_free](#) (w)
- subroutine [gsl_eigen_gen_params](#) (compute_s, compute_t, balance, w)
- integer(c_int) function [gsl_eigen_gen](#) (a, b, alpha, beta, w)
- integer(c_int) function [gsl_eigen_gen_qz](#) (a, b, alpha, beta, q, z, w)
- type(c_ptr) function [gsl_eigen_genv_alloc](#) (n)
- subroutine [gsl_eigen_genv_free](#) (w)
- integer(c_int) function [gsl_eigen_genv](#) (a, b, alpha, beta, evec, w)
- integer(c_int) function [gsl_eigen_genv_qz](#) (a, b, alpha, beta, evec, q, z, w)
- integer(c_int) function [gsl_eigen_symmv_sort](#) (eval, evec, sort_type)
- integer(c_int) function [gsl_eigen_hermv_sort](#) (eval, evec, sort_type)
- integer(c_int) function [gsl_eigen_nonsymmv_sort](#) (eval, evec, sort_type)
- integer(c_int) function [gsl_eigen_gensymmv_sort](#) (eval, evec, sort_type)
- integer(c_int) function [gsl_eigen_genhermv_sort](#) (eval, evec, sort_type)
- integer(c_int) function [gsl_eigen_genv_sort](#) (alpha, beta, evec, sort_type)

49.14.1 Function/Subroutine Documentation

49.14.1.1 `gsl_eigen_gen()`

```
integer(c_int) function gsl_eigen_gen (  
    type(c_ptr), value a,  
    type(c_ptr), value b,  
    type(c_ptr), value alpha,  
    type(c_ptr), value beta,  
    type(c_ptr), value w )
```

49.14.1.2 `gsl_eigen_gen_alloc()`

```
type(c_ptr) function gsl_eigen_gen_alloc (  
    integer(c_size_t), value n )
```

49.14.1.3 `gsl_eigen_gen_free()`

```
subroutine gsl_eigen_gen_free (  
    type(c_ptr), value w )
```

49.14.1.4 `gsl_eigen_gen_params()`

```
subroutine gsl_eigen_gen_params (  
    integer(c_int), value compute_s,  
    integer(c_int), value compute_t,  
    integer(c_int), value balance,  
    type(c_ptr), value w )
```

49.14.1.5 `gsl_eigen_gen_qz()`

```
integer(c_int) function gsl_eigen_gen_qz (  
    type(c_ptr), value a,  
    type(c_ptr), value b,  
    type(c_ptr), value alpha,  
    type(c_ptr), value beta,  
    type(c_ptr), value q,  
    type(c_ptr), value z,  
    type(c_ptr), value w )
```

49.14.1.6 `gsl_eigen_genherm()`

```
integer(c_int) function gsl_eigen_genherm (  
    type(c_ptr), value a,  
    type(c_ptr), value b,  
    type(c_ptr), value eval,  
    type(c_ptr), value w )
```

49.14.1.7 `gsl_eigen_genherm_alloc()`

```
type(c_ptr) function gsl_eigen_genherm_alloc (  
    integer(c_size_t), value n )
```

49.14.1.8 `gsl_eigen_genherm_free()`

```
subroutine gsl_eigen_genherm_free (  
    type(c_ptr), value w )
```

49.14.1.9 `gsl_eigen_genhermv()`

```
integer(c_int) function gsl_eigen_genhermv (  
    type(c_ptr), value a,  
    type(c_ptr), value b,  
    type(c_ptr), value eval,  
    type(c_ptr), value evec,  
    type(c_ptr), value w )
```

49.14.1.10 `gsl_eigen_genhermv_alloc()`

```
type(c_ptr) function gsl_eigen_genhermv_alloc (  
    integer(c_size_t), value n )
```

49.14.1.11 `gsl_eigen_genhermv_free()`

```
subroutine gsl_eigen_genhermv_free (  
    type(c_ptr), value w )
```

49.14.1.12 gsl_eigen_genhermv_sort()

```
integer(c_int) function gsl_eigen_genhermv_sort (  
    type(c_ptr), value eval,  
    type(c_ptr), value evec,  
    integer(c_int), value sort_type )
```

49.14.1.13 gsl_eigen_gensymm()

```
integer(c_int) function gsl_eigen_gensymm (  
    type(c_ptr), value a,  
    type(c_ptr), value b,  
    type(c_ptr), value eval,  
    type(c_ptr), value w )
```

49.14.1.14 gsl_eigen_gensymm_alloc()

```
type(c_ptr) function gsl_eigen_gensymm_alloc (  
    integer(c_size_t), value n )
```

49.14.1.15 gsl_eigen_gensymm_free()

```
subroutine gsl_eigen_gensymm_free (  
    type(c_ptr), value w )
```

49.14.1.16 gsl_eigen_gensymmv()

```
integer(c_int) function gsl_eigen_gensymmv (  
    type(c_ptr), value a,  
    type(c_ptr), value b,  
    type(c_ptr), value eval,  
    type(c_ptr), value evec,  
    type(c_ptr), value w )
```

49.14.1.17 gsl_eigen_gensymmv_alloc()

```
type(c_ptr) function gsl_eigen_gensymmv_alloc (  
    integer(c_size_t), value n )
```

49.14.1.18 gsl_eigen_gensymmv_free()

```
subroutine gsl_eigen_gensymmv_free (
    type(c_ptr), value w )
```

49.14.1.19 gsl_eigen_gensymmv_sort()

```
integer(c_int) function gsl_eigen_gensymmv_sort (
    type(c_ptr), value eval,
    type(c_ptr), value evec,
    integer(c_int), value sort_type )
```

49.14.1.20 gsl_eigen_genv()

```
integer(c_int) function gsl_eigen_genv (
    type(c_ptr), value a,
    type(c_ptr), value b,
    type(c_ptr), value alpha,
    type(c_ptr), value beta,
    type(c_ptr), value evec,
    type(c_ptr), value w )
```

49.14.1.21 gsl_eigen_genv_alloc()

```
type(c_ptr) function gsl_eigen_genv_alloc (
    integer(c_size_t), value n )
```

49.14.1.22 gsl_eigen_genv_free()

```
subroutine gsl_eigen_genv_free (
    type(c_ptr), value w )
```

49.14.1.23 gsl_eigen_genv_qz()

```
integer(c_int) function gsl_eigen_genv_qz (
    type(c_ptr), value a,
    type(c_ptr), value b,
    type(c_ptr), value alpha,
    type(c_ptr), value beta,
    type(c_ptr), value evec,
    type(c_ptr), value q,
    type(c_ptr), value z,
    type(c_ptr), value w )
```

49.14.1.24 gsl_eigen_genv_sort()

```
integer(c_int) function gsl_eigen_genv_sort (  
    type(c_ptr), value alpha,  
    type(c_ptr), value beta,  
    type(c_ptr), value evec,  
    integer(c_int), value sort_type )
```

49.14.1.25 gsl_eigen_herm()

```
integer(c_int) function gsl_eigen_herm (  
    type(c_ptr), value a,  
    type(c_ptr), value eval,  
    type(c_ptr), value w )
```

49.14.1.26 gsl_eigen_herm_alloc()

```
type(c_ptr) function gsl_eigen_herm_alloc (  
    integer(c_size_t), value n )
```

49.14.1.27 gsl_eigen_herm_free()

```
subroutine gsl_eigen_herm_free (  
    type(c_ptr), value w )
```

49.14.1.28 gsl_eigen_hermv()

```
integer(c_int) function gsl_eigen_hermv (  
    type(c_ptr), value a,  
    type(c_ptr), value eval,  
    type(c_ptr), value evec,  
    type(c_ptr), value w )
```

49.14.1.29 gsl_eigen_hermv_alloc()

```
type(c_ptr) function gsl_eigen_hermv_alloc (  
    integer(c_size_t), value n )
```

49.14.1.30 gsl_eigen_hermv_free()

```
subroutine gsl_eigen_hermv_free (
    type(c_ptr), value w )
```

49.14.1.31 gsl_eigen_hermv_sort()

```
integer(c_int) function gsl_eigen_hermv_sort (
    type(c_ptr), value eval,
    type(c_ptr), value evec,
    integer(c_int), value sort_type )
```

49.14.1.32 gsl_eigen_nonsymm()

```
integer(c_int) function gsl_eigen_nonsymm (
    type(c_ptr), value a,
    type(c_ptr), value eval,
    type(c_ptr), value w )
```

49.14.1.33 gsl_eigen_nonsymm_alloc()

```
type(c_ptr) function gsl_eigen_nonsymm_alloc (
    integer(c_size_t), value n )
```

49.14.1.34 gsl_eigen_nonsymm_free()

```
subroutine gsl_eigen_nonsymm_free (
    type(c_ptr), value w )
```

49.14.1.35 gsl_eigen_nonsymm_params()

```
subroutine gsl_eigen_nonsymm_params (
    integer(c_int), value compute_t,
    integer(c_int), value balance,
    type(c_ptr), value w )
```


49.14.1.36 gsl_eigen_nonsymm_z()

```
integer(c_int) function gsl_eigen_nonsymm_z (  
    type(c_ptr), value a,  
    type(c_ptr), value eval,  
    type(c_ptr), value z,  
    type(c_ptr), value w )
```

49.14.1.37 gsl_eigen_nonsymmv()

```
integer(c_int) function gsl_eigen_nonsymmv (  
    type(c_ptr), value a,  
    type(c_ptr), value eval,  
    type(c_ptr), value evec,  
    type(c_ptr), value w )
```

49.14.1.38 gsl_eigen_nonsymmv_alloc()

```
type(c_ptr) function gsl_eigen_nonsymmv_alloc (  
    integer(c_size_t), value n )
```

49.14.1.39 gsl_eigen_nonsymmv_free()

```
subroutine gsl_eigen_nonsymmv_free (  
    type(c_ptr), value w )
```

49.14.1.40 gsl_eigen_nonsymmv_params()

```
subroutine gsl_eigen_nonsymmv_params (  
    integer(c_int), value balance,  
    type(c_ptr), value w )
```

49.14.1.41 gsl_eigen_nonsymmv_sort()

```
integer(c_int) function gsl_eigen_nonsymmv_sort (  
    type(c_ptr), value eval,  
    type(c_ptr), value evec,  
    integer(c_int), value sort_type )
```

49.14.1.42 gsl_eigen_nonsymmv_z()

```
integer(c_int) function gsl_eigen_nonsymmv_z (  
    type(c_ptr), value a,  
    type(c_ptr), value eval,  
    type(c_ptr), value evec,  
    type(c_ptr), value z,  
    type(c_ptr), value w )
```

49.14.1.43 gsl_eigen_symm()

```
integer(c_int) function gsl_eigen_symm (  
    type(c_ptr), value a,  
    type(c_ptr), value eval,  
    type(c_ptr), value w )
```

49.14.1.44 gsl_eigen_symm_alloc()

```
type(c_ptr) function gsl_eigen_symm_alloc (  
    integer(c_size_t), value n )
```

49.14.1.45 gsl_eigen_symm_free()

```
subroutine gsl_eigen_symm_free (  
    type(c_ptr), value w )
```

49.14.1.46 gsl_eigen_symmv()

```
integer(c_int) function gsl_eigen_symmv (  
    type(c_ptr), value a,  
    type(c_ptr), value eval,  
    type(c_ptr), value evec,  
    type(c_ptr), value w )
```

49.14.1.47 gsl_eigen_symmv_alloc()

```
type(c_ptr) function gsl_eigen_symmv_alloc (  
    integer(c_size_t), value n )
```

49.14.1.48 gsl_eigen_symmv_free()

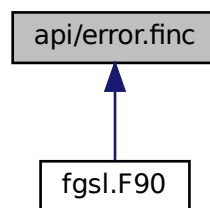
```
subroutine gsl_eigen_symmv_free (  
    type(c_ptr), value w )
```

49.14.1.49 gsl_eigen_symmv_sort()

```
integer(c_int) function gsl_eigen_symmv_sort (  
    type(c_ptr), value eval,  
    type(c_ptr), value evec,  
    integer(c_int), value sort_type )
```

49.15 api/error.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(fgsl_error_handler_t) function [fgsl_set_error_handler](#) (new_handler)
- type(fgsl_error_handler_t) function [fgsl_set_error_handler_off](#) ()
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_strerror](#) (errno)
- subroutine [fgsl_error](#) (reason, file, line, errno)
- logical function [fgsl_error_handler_status](#) (error_handler_t)
- type(fgsl_error_handler_t) function [fgsl_error_handler_init](#) (handler_sr)

49.15.1 Function/Subroutine Documentation

49.15.1.1 fgsl_error()

```
subroutine fgsl_error (
    character(kind=fgsl_char,len=*), intent(in) reason,
    character(kind=fgsl_char,len=*), intent(in) file,
    integer(fgsl_int), intent(in) line,
    integer(fgsl_int), intent(in) errno )
```

49.15.1.2 fgsl_error_handler_init()

```
type(fgsl_error_handler_t) function fgsl_error_handler_init (
    handler_sr )
```

49.15.1.3 fgsl_error_handler_status()

```
logical function fgsl_error_handler_status (
    type(fgsl_error_handler_t), intent(in) error_handler_t )
```

49.15.1.4 fgsl_set_error_handler()

```
type(fgsl_error_handler_t) function fgsl_set_error_handler (
    type(fgsl_error_handler_t), intent(in) new_handler )
```

49.15.1.5 fgsl_set_error_handler_off()

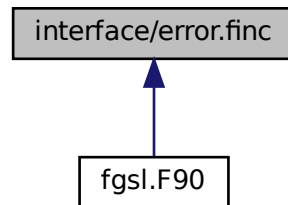
```
type(fgsl_error_handler_t) function fgsl_set_error_handler_off
```

49.15.1.6 fgsl_strerror()

```
character(kind=fgsl_char,len=fgsl_strerror) function fgsl_strerror (
    integer(fgsl_int), intent(in) errno )
```

49.16 interface/error.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_funptr) function [gsl_set_error_handler](#) (new_handler)
- type(c_funptr) function [gsl_set_error_handler_off](#) ()
- type(c_ptr) function [gsl_strerror](#) (errno)
- subroutine [gsl_error](#) (reason, file, line, gsl_errno)

49.16.1 Function/Subroutine Documentation

49.16.1.1 [gsl_error\(\)](#)

```
subroutine gsl_error (  
    type(c_ptr), value reason,  
    type(c_ptr), value file,  
    integer(c_int), value line,  
    integer(c_int), value gsl_errno )
```

49.16.1.2 [gsl_set_error_handler\(\)](#)

```
type(c_funptr) function gsl_set_error_handler (  
    type(c_funptr), value new_handler )
```

49.16.1.3 `gsl_set_error_handler_off()`

`type(c_funptr) function gsl_set_error_handler_off`

49.16.1.4 `gsl_strerror()`

`type(c_ptr) function gsl_strerror (`
 `integer(c_int), value errno)`

49.17 `api/fft.finc` File Reference

Functions/Subroutines

- `integer(fgsl_int) function fgsl_fft_complex_radix2_forward` (data, stride, n)
- `integer(fgsl_int) function fgsl_fft_complex_radix2_transform` (data, stride, n, sign)
- `integer(fgsl_int) function fgsl_fft_complex_radix2_backward` (data, stride, n)
- `integer(fgsl_int) function fgsl_fft_complex_radix2_inverse` (data, stride, n)
- `integer(fgsl_int) function fgsl_fft_complex_radix2_dif_forward` (data, stride, n)
- `integer(fgsl_int) function fgsl_fft_complex_radix2_dif_transform` (data, stride, n, sign)
- `integer(fgsl_int) function fgsl_fft_complex_radix2_dif_backward` (data, stride, n)
- `integer(fgsl_int) function fgsl_fft_complex_radix2_dif_inverse` (data, stride, n)
- `type(fgsl_fft_complex_wavetable) function fgsl_fft_complex_wavetable_alloc` (n)
- `subroutine fgsl_fft_complex_wavetable_free` (w)
- `type(fgsl_fft_complex_workspace) function fgsl_fft_complex_workspace_alloc` (n)
- `subroutine fgsl_fft_complex_workspace_free` (w)
- `integer(fgsl_int) function fgsl_fft_complex_forward` (data, stride, n, wavetable, work)
- `integer(fgsl_int) function fgsl_fft_complex_transform` (data, stride, n, wavetable, work, sign)
- `integer(fgsl_int) function fgsl_fft_complex_backward` (data, stride, n, wavetable, work)
- `integer(fgsl_int) function fgsl_fft_complex_inverse` (data, stride, n, wavetable, work)
- `integer(fgsl_int) function fgsl_fft_real_radix2_transform` (data, stride, n)
- `integer(fgsl_int) function fgsl_fft_halfcomplex_radix2_inverse` (data, stride, n)
- `integer(fgsl_int) function fgsl_fft_halfcomplex_radix2_backward` (data, stride, n)
- `type(fgsl_fft_real_wavetable) function fgsl_fft_real_wavetable_alloc` (n)
- `subroutine fgsl_fft_real_wavetable_free` (w)
- `type(fgsl_fft_halfcomplex_wavetable) function fgsl_fft_halfcomplex_wavetable_alloc` (n)
- `subroutine fgsl_fft_halfcomplex_wavetable_free` (w)
- `type(fgsl_fft_real_workspace) function fgsl_fft_real_workspace_alloc` (n)
- `subroutine fgsl_fft_real_workspace_free` (w)
- `integer(fgsl_int) function fgsl_fft_real_transform` (data, stride, n, wavetable, work)
- `integer(fgsl_int) function fgsl_fft_halfcomplex_transform` (data, stride, n, wavetable, work)
- `integer(fgsl_int) function fgsl_fft_real_unpack` (real_coefficient, complex_coefficient, stride, n)
- `integer(fgsl_int) function fgsl_fft_halfcomplex_unpack` (halfcomplex_coefficient, complex_coefficient, stride, n)

49.17.1 Function/Subroutine Documentation

49.17.1.1 fgsl_fft_complex_backward()

```
integer(fgsl_int) function fgsl_fft_complex_backward (
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    type(fgsl_fft_complex_wavetable), intent(in) wavetable,
    type(fgsl_fft_complex_workspace) work )
```

49.17.1.2 fgsl_fft_complex_forward()

```
integer(fgsl_int) function fgsl_fft_complex_forward (
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    type(fgsl_fft_complex_wavetable), intent(in) wavetable,
    type(fgsl_fft_complex_workspace) work )
```

49.17.1.3 fgsl_fft_complex_inverse()

```
integer(fgsl_int) function fgsl_fft_complex_inverse (
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    type(fgsl_fft_complex_wavetable), intent(in) wavetable,
    type(fgsl_fft_complex_workspace) work )
```

49.17.1.4 fgsl_fft_complex_radix2_backward()

```
integer(fgsl_int) function fgsl_fft_complex_radix2_backward (
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.5 fgsl_fft_complex_radix2_dif_backward()

```
integer(fgsl_int) function fgsl_fft_complex_radix2_dif_backward (
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.6 fgsl_fft_complex_radix2_dif_forward()

```
integer(fgsl_int) function fgsl_fft_complex_radix2_dif_forward (  
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.7 fgsl_fft_complex_radix2_dif_inverse()

```
integer(fgsl_int) function fgsl_fft_complex_radix2_dif_inverse (  
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.8 fgsl_fft_complex_radix2_dif_transform()

```
integer(fgsl_int) function fgsl_fft_complex_radix2_dif_transform (  
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n,  
    integer(fgsl_int), intent(in) sign )
```

49.17.1.9 fgsl_fft_complex_radix2_forward()

```
integer(fgsl_int) function fgsl_fft_complex_radix2_forward (  
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.10 fgsl_fft_complex_radix2_inverse()

```
integer(fgsl_int) function fgsl_fft_complex_radix2_inverse (  
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```


49.17.1.11 fgsl_fft_complex_radix2_transform()

```
integer(fgsl_int) function fgsl_fft_complex_radix2_transform (
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_int), intent(in) sign )
```

49.17.1.12 fgsl_fft_complex_transform()

```
integer(fgsl_int) function fgsl_fft_complex_transform (
    complex(fgsl_double_complex), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    type(fgsl_fft_complex_wavetable), intent(in) wavetable,
    type(fgsl_fft_complex_workspace) work,
    integer(fgsl_int), intent(in) sign )
```

49.17.1.13 fgsl_fft_complex_wavetable_alloc()

```
type(fgsl_fft_complex_wavetable) function fgsl_fft_complex_wavetable_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.14 fgsl_fft_complex_wavetable_free()

```
subroutine fgsl_fft_complex_wavetable_free (
    type(fgsl_fft_complex_wavetable) w )
```

49.17.1.15 fgsl_fft_complex_workspace_alloc()

```
type(fgsl_fft_complex_workspace) function fgsl_fft_complex_workspace_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.16 fgsl_fft_complex_workspace_free()

```
subroutine fgsl_fft_complex_workspace_free (
    type(fgsl_fft_complex_workspace) w )
```

49.17.1.17 fgsl_fft_halfcomplex_radix2_backward()

```
integer(fgsl_int) function fgsl_fft_halfcomplex_radix2_backward (
    real(fgsl_double), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.18 fgsl_fft_halfcomplex_radix2_inverse()

```
integer(fgsl_int) function fgsl_fft_halfcomplex_radix2_inverse (
    real(fgsl_double), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.19 fgsl_fft_halfcomplex_transform()

```
integer(fgsl_int) function fgsl_fft_halfcomplex_transform (
    real(fgsl_double), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    type(fgsl_fft_halfcomplex_wavetable), intent(in) wavetable,
    type(fgsl_fft_real_workspace) work )
```

49.17.1.20 fgsl_fft_halfcomplex_unpack()

```
integer(fgsl_int) function fgsl_fft_halfcomplex_unpack (
    real(fgsl_double), dimension(*), intent(in), target halfcomplex_coefficient,
    complex(fgsl_double_complex), dimension(*), intent(inout), target complex_coefficient,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.21 fgsl_fft_halfcomplex_wavetable_alloc()

```
type(fgsl_fft_halfcomplex_wavetable) function fgsl_fft_halfcomplex_wavetable_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.22 fgsl_fft_halfcomplex_wavetable_free()

```
subroutine fgsl_fft_halfcomplex_wavetable_free (
    type(fgsl_fft_halfcomplex_wavetable) w )
```

49.17.1.23 fgsl_fft_real_radix2_transform()

```
integer(fgsl_int) function fgsl_fft_real_radix2_transform (
    real(fgsl_double), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.24 fgsl_fft_real_transform()

```
integer(fgsl_int) function fgsl_fft_real_transform (
    real(fgsl_double), dimension(*), intent(inout), target data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    type(fgsl_fft_real_wavetable), intent(in) wavetable,
    type(fgsl_fft_real_workspace) work )
```

49.17.1.25 fgsl_fft_real_unpack()

```
integer(fgsl_int) function fgsl_fft_real_unpack (
    real(fgsl_double), dimension(*), intent(in), target real_coefficient,
    complex(fgsl_double_complex), dimension(*), intent(inout), target complex_coefficient,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.26 fgsl_fft_real_wavetable_alloc()

```
type(fgsl_fft_real_wavetable) function fgsl_fft_real_wavetable_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.27 fgsl_fft_real_wavetable_free()

```
subroutine fgsl_fft_real_wavetable_free (
    type(fgsl_fft_real_wavetable) w )
```

49.17.1.28 fgsl_fft_real_workspace_alloc()

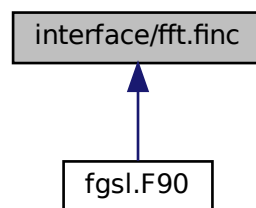
```
type(fgsl_fft_real_workspace) function fgsl_fft_real_workspace_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.17.1.29 fgsl_fft_real_workspace_free()

```
subroutine fgsl_fft_real_workspace_free (
    type(fgsl_fft_real_workspace) w )
```

49.18 interface/fft.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- integer(c_int) function [gsl_fft_complex_radix2_forward](#) (data, stride, n)
- integer(c_int) function [gsl_fft_complex_radix2_transform](#) (data, stride, n, sign)
- integer(c_int) function [gsl_fft_complex_radix2_backward](#) (data, stride, n)
- integer(c_int) function [gsl_fft_complex_radix2_inverse](#) (data, stride, n)
- integer(c_int) function [gsl_fft_complex_radix2_dif_forward](#) (data, stride, n)
- integer(c_int) function [gsl_fft_complex_radix2_dif_transform](#) (data, stride, n, sign)
- integer(c_int) function [gsl_fft_complex_radix2_dif_backward](#) (data, stride, n)
- integer(c_int) function [gsl_fft_complex_radix2_dif_inverse](#) (data, stride, n)
- type(c_ptr) function [gsl_fft_complex_wavetable_alloc](#) (n)
- subroutine [gsl_fft_complex_wavetable_free](#) (w)
- type(c_ptr) function [gsl_fft_complex_workspace_alloc](#) (n)
- subroutine [gsl_fft_complex_workspace_free](#) (w)
- integer(c_int) function [gsl_fft_complex_forward](#) (data, stride, n, wavetable, work)
- integer(c_int) function [gsl_fft_complex_transform](#) (data, stride, n, wavetable, work, sign)
- integer(c_int) function [gsl_fft_complex_backward](#) (data, stride, n, wavetable, work)
- integer(c_int) function [gsl_fft_complex_inverse](#) (data, stride, n, wavetable, work)
- integer(c_int) function [gsl_fft_real_radix2_transform](#) (data, stride, n)
- integer(c_int) function [gsl_fft_halfcomplex_radix2_inverse](#) (data, stride, n)
- integer(c_int) function [gsl_fft_halfcomplex_radix2_backward](#) (data, stride, n)
- type(c_ptr) function [gsl_fft_real_wavetable_alloc](#) (n)
- subroutine [gsl_fft_real_wavetable_free](#) (w)
- type(c_ptr) function [gsl_fft_halfcomplex_wavetable_alloc](#) (n)
- subroutine [gsl_fft_halfcomplex_wavetable_free](#) (w)
- type(c_ptr) function [gsl_fft_real_workspace_alloc](#) (n)
- subroutine [gsl_fft_real_workspace_free](#) (w)
- integer(c_int) function [gsl_fft_real_transform](#) (data, stride, n, wavetable, work)
- integer(c_int) function [gsl_fft_halfcomplex_transform](#) (data, stride, n, wavetable, work)
- integer(c_int) function [gsl_fft_real_unpack](#) (real_coefficient, complex_coefficient, stride, n)
- integer(c_int) function [gsl_fft_halfcomplex_unpack](#) (halfcomplex_coefficient, complex_coefficient, stride, n)

49.18.1 Function/Subroutine Documentation

49.18.1.1 `gsl_fft_complex_backward()`

```
integer(c_int) function gsl_fft_complex_backward (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    type(c_ptr), value wavetable,  
    type(c_ptr), value work )
```

49.18.1.2 `gsl_fft_complex_forward()`

```
integer(c_int) function gsl_fft_complex_forward (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    type(c_ptr), value wavetable,  
    type(c_ptr), value work )
```

49.18.1.3 `gsl_fft_complex_inverse()`

```
integer(c_int) function gsl_fft_complex_inverse (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    type(c_ptr), value wavetable,  
    type(c_ptr), value work )
```

49.18.1.4 `gsl_fft_complex_radix2_backward()`

```
integer(c_int) function gsl_fft_complex_radix2_backward (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.18.1.5 `gsl_fft_complex_radix2_dif_backward()`

```
integer(c_int) function gsl_fft_complex_radix2_dif_backward (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.18.1.6 `gsl_fft_complex_radix2_dif_forward()`

```
integer(c_int) function gsl_fft_complex_radix2_dif_forward (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.18.1.7 `gsl_fft_complex_radix2_dif_inverse()`

```
integer(c_int) function gsl_fft_complex_radix2_dif_inverse (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.18.1.8 `gsl_fft_complex_radix2_dif_transform()`

```
integer(c_int) function gsl_fft_complex_radix2_dif_transform (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    integer(c_int), value sign )
```

49.18.1.9 `gsl_fft_complex_radix2_forward()`

```
integer(c_int) function gsl_fft_complex_radix2_forward (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.18.1.10 `gsl_fft_complex_radix2_inverse()`

```
integer(c_int) function gsl_fft_complex_radix2_inverse (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.18.1.11 `gsl_fft_complex_radix2_transform()`

```
integer(c_int) function gsl_fft_complex_radix2_transform (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    integer(c_int), value sign )
```

49.18.1.12 `gsl_fft_complex_transform()`

```
integer(c_int) function gsl_fft_complex_transform (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    type(c_ptr), value wavetable,  
    type(c_ptr), value work,  
    integer(c_int), value sign )
```

49.18.1.13 `gsl_fft_complex_wavetable_alloc()`

```
type(c_ptr) function gsl_fft_complex_wavetable_alloc (  
    integer(c_size_t), value n )
```

49.18.1.14 `gsl_fft_complex_wavetable_free()`

```
subroutine gsl_fft_complex_wavetable_free (  
    type(c_ptr), value w )
```

49.18.1.15 `gsl_fft_complex_workspace_alloc()`

```
type(c_ptr) function gsl_fft_complex_workspace_alloc (  
    integer(c_size_t), value n )
```

49.18.1.16 `gsl_fft_complex_workspace_free()`

```
subroutine gsl_fft_complex_workspace_free (
    type(c_ptr), value w )
```

49.18.1.17 `gsl_fft_halfcomplex_radix2_backward()`

```
integer(c_int) function gsl_fft_halfcomplex_radix2_backward (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.18.1.18 `gsl_fft_halfcomplex_radix2_inverse()`

```
integer(c_int) function gsl_fft_halfcomplex_radix2_inverse (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.18.1.19 `gsl_fft_halfcomplex_transform()`

```
integer(c_int) function gsl_fft_halfcomplex_transform (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    type(c_ptr), value wavetable,
    type(c_ptr), value work )
```

49.18.1.20 `gsl_fft_halfcomplex_unpack()`

```
integer(c_int) function gsl_fft_halfcomplex_unpack (
    type(c_ptr), value halfcomplex_coefficient,
    type(c_ptr), value complex_coefficient,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.18.1.21 `gsl_fft_halfcomplex_wavetable_alloc()`

```
type(c_ptr) function gsl_fft_halfcomplex_wavetable_alloc (
    integer(c_size_t), value n )
```


49.18.1.22 `gsl_fft_halfcomplex_wavetable_free()`

```
subroutine gsl_fft_halfcomplex_wavetable_free (
    type(c_ptr), value w )
```

49.18.1.23 `gsl_fft_real_radix2_transform()`

```
integer(c_int) function gsl_fft_real_radix2_transform (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.18.1.24 `gsl_fft_real_transform()`

```
integer(c_int) function gsl_fft_real_transform (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    type(c_ptr), value wavetable,
    type(c_ptr), value work )
```

49.18.1.25 `gsl_fft_real_unpack()`

```
integer(c_int) function gsl_fft_real_unpack (
    type(c_ptr), value real_coefficient,
    type(c_ptr), value complex_coefficient,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.18.1.26 `gsl_fft_real_wavetable_alloc()`

```
type(c_ptr) function gsl_fft_real_wavetable_alloc (
    integer(c_size_t), value n )
```

49.18.1.27 `gsl_fft_real_wavetable_free()`

```
subroutine gsl_fft_real_wavetable_free (
    type(c_ptr), value w )
```

49.18.1.28 `gsl_fft_real_workspace_alloc()`

```
type(c_ptr) function gsl_fft_real_workspace_alloc (
    integer(c_size_t), value n )
```

49.18.1.29 `gsl_fft_real_workspace_free()`

```
subroutine gsl_fft_real_workspace_free (
    type(c_ptr), value w )
```

49.19 `api/filter.finc` File Reference**Functions/Subroutines**

- type(fgsl_filter_gaussian_workspace) function [fgsl_filter_gaussian_alloc](#) (k)
- subroutine [fgsl_filter_gaussian_free](#) (w)
- integer(fgsl_int) function [fgsl_filter_gaussian](#) (endtype, alpha, order, x, y, w)
- integer(fgsl_int) function [fgsl_filter_gaussian_kernel](#) (alpha, order, normalize, kernel)
- type(fgsl_filter_median_workspace) function [fgsl_filter_median_alloc](#) (k)
- subroutine [fgsl_filter_median_free](#) (w)
- integer(fgsl_int) function [fgsl_filter_median](#) (endtype, alpha, order, x, y, w)
- type(fgsl_filter_rmedian_workspace) function [fgsl_filter_rmedian_alloc](#) (k)
- subroutine [fgsl_filter_rmedian_free](#) (w)
- integer(fgsl_int) function [fgsl_filter_rmedian](#) (endtype, alpha, order, x, y, w)
- type(fgsl_filter_impulse_workspace) function [fgsl_filter_impulse_alloc](#) (k)
- subroutine [fgsl_filter_impulse_free](#) (w)
- integer(fgsl_int) function [fgsl_filter_impulse](#) (endtype, scale_type, t, x, y, xmedian, xsigma, noutlier, ioutlier, w)

49.19.1 Function/Subroutine Documentation**49.19.1.1 `fgsl_filter_gaussian()`**

```
integer(fgsl_int) function fgsl_filter_gaussian (
    integer(fgsl_int), intent(in) endtype,
    real(fgsl_double), intent(in) alpha,
    integer(fgsl_size_t), intent(in) order,
    type(fgsl_vector), intent(in) x,
    type(fgsl_vector), intent(inout) y,
    type(fgsl_filter_gaussian_workspace), intent(inout) w )
```

49.19.1.2 fgsl_filter_gaussian_alloc()

```
type(fgsl_filter_gaussian_workspace) function fgsl_filter_gaussian_alloc (
    integer(fgsl_size_t), intent(in) k )
```

49.19.1.3 fgsl_filter_gaussian_free()

```
subroutine fgsl_filter_gaussian_free (
    type(fgsl_filter_gaussian_workspace), intent(inout) w )
```

49.19.1.4 fgsl_filter_gaussian_kernel()

```
integer(fgsl_int) function fgsl_filter_gaussian_kernel (
    real(fgsl_double), intent(in) alpha,
    integer(fgsl_size_t), intent(in) order,
    integer(fgsl_int), intent(in) normalize,
    type(fgsl_vector), intent(inout) kernel )
```

49.19.1.5 fgsl_filter_impulse()

```
integer(fgsl_int) function fgsl_filter_impulse (
    integer(fgsl_int), intent(in) endtype,
    integer(fgsl_int), intent(in) scale_type,
    real(fgsl_double), intent(in) t,
    type(fgsl_vector), intent(in) x,
    type(fgsl_vector), intent(inout) y,
    type(fgsl_vector), intent(inout) xmedian,
    type(fgsl_vector), intent(inout) xsigma,
    integer(fgsl_size_t), intent(inout) noutlier,
    type(fgsl_vector_int), intent(inout) ioutlier,
    type(fgsl_filter_impulse_workspace), intent(inout) w )
```

49.19.1.6 fgsl_filter_impulse_alloc()

```
type(fgsl_filter_impulse_workspace) function fgsl_filter_impulse_alloc (
    integer(fgsl_size_t), intent(in) k )
```

49.19.1.7 fgsl_filter_impulse_free()

```
subroutine fgsl_filter_impulse_free (  
    type(fgsl_filter_impulse_workspace), intent(inout) w )
```

49.19.1.8 fgsl_filter_median()

```
integer(fgsl_int) function fgsl_filter_median (  
    integer(fgsl_int), intent(in) endtype,  
    real(fgsl_double), intent(in) alpha,  
    integer(fgsl_size_t), intent(in) order,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y,  
    type(fgsl_filter_median_workspace), intent(inout) w )
```

49.19.1.9 fgsl_filter_median_alloc()

```
type(fgsl_filter_median_workspace) function fgsl_filter_median_alloc (  
    integer(fgsl_size_t), intent(in) k )
```

49.19.1.10 fgsl_filter_median_free()

```
subroutine fgsl_filter_median_free (  
    type(fgsl_filter_median_workspace), intent(inout) w )
```

49.19.1.11 fgsl_filter_rmedian()

```
integer(fgsl_int) function fgsl_filter_rmedian (  
    integer(fgsl_int), intent(in) endtype,  
    real(fgsl_double), intent(in) alpha,  
    integer(fgsl_size_t), intent(in) order,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y,  
    type(fgsl_filter_rmedian_workspace), intent(inout) w )
```

49.19.1.12 fgsl_filter_rmedian_alloc()

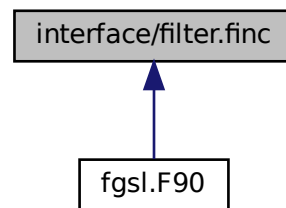
```
type(fgsl_filter_rmedian_workspace) function fgsl_filter_rmedian_alloc (  
    integer(fgsl_size_t), intent(in) k )
```

49.19.1.13 fgsl_filter_rmedian_free()

```
subroutine fgsl_filter_rmedian_free (
    type(fgsl_filter_rmedian_workspace), intent(inout) w )
```

49.20 interface/filter.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- type(c_ptr) function [gsl_filter_gaussian_alloc](#) (k)
- subroutine [gsl_filter_gaussian_free](#) (w)
- integer(c_int) function [gsl_filter_gaussian](#) (endtype, alpha, order, x, y, w)
- integer(c_int) function [gsl_filter_gaussian_kernel](#) (alpha, order, normalize, kernel)
- type(c_ptr) function [gsl_filter_median_alloc](#) (k)
- subroutine [gsl_filter_median_free](#) (w)
- integer(c_int) function [gsl_filter_median](#) (endtype, alpha, order, x, y, w)
- type(c_ptr) function [gsl_filter_rmedian_alloc](#) (k)
- subroutine [gsl_filter_rmedian_free](#) (w)
- integer(c_int) function [gsl_filter_rmedian](#) (endtype, alpha, order, x, y, w)
- type(c_ptr) function [gsl_filter_impulse_alloc](#) (k)
- subroutine [gsl_filter_impulse_free](#) (w)
- integer(c_int) function [gsl_filter_impulse](#) (endtype, scale_type, t, x, y, xmedian, xsigma, noutlier, ioutlier, w)

49.20.1 Function/Subroutine Documentation**49.20.1.1 gsl_filter_gaussian()**

```
integer(c_int) function gsl_filter_gaussian (
    integer(c_int), value endtype,
    real(c_double), value alpha,
    integer(c_size_t), value order,
    type(c_ptr), value x,
    type(c_ptr), value y,
    type(c_ptr), value w )
```

49.20.1.2 `gsl_filter_gaussian_alloc()`

```
type(c_ptr) function gsl_filter_gaussian_alloc (
    integer(c_size_t), value k )
```

49.20.1.3 `gsl_filter_gaussian_free()`

```
subroutine gsl_filter_gaussian_free (
    type(c_ptr), value w )
```

49.20.1.4 `gsl_filter_gaussian_kernel()`

```
integer(c_int) function gsl_filter_gaussian_kernel (
    real(c_double), value alpha,
    integer(c_size_t), value order,
    integer(c_int), value normalize,
    type(c_ptr), value kernel )
```

49.20.1.5 `gsl_filter_impulse()`

```
integer(c_int) function gsl_filter_impulse (
    integer(c_int), value endtype,
    integer(c_int), value scale_type,
    real(c_double), value t,
    type(c_ptr), value x,
    type(c_ptr), value y,
    type(c_ptr), value xmedian,
    type(c_ptr), value xsigma,
    integer(c_size_t), intent(inout) noutlier,
    type(c_ptr), value ioutlier,
    type(c_ptr), value w )
```

49.20.1.6 `gsl_filter_impulse_alloc()`

```
type(c_ptr) function gsl_filter_impulse_alloc (
    integer(c_size_t), value k )
```

49.20.1.7 gsl_filter_impulse_free()

```
subroutine gsl_filter_impulse_free (  
    type(c_ptr), value w )
```

49.20.1.8 gsl_filter_median()

```
integer(c_int) function gsl_filter_median (  
    integer(c_int), value endtype,  
    real(c_double), value alpha,  
    integer(c_size_t), value order,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value w )
```

49.20.1.9 gsl_filter_median_alloc()

```
type(c_ptr) function gsl_filter_median_alloc (  
    integer(c_size_t), value k )
```

49.20.1.10 gsl_filter_median_free()

```
subroutine gsl_filter_median_free (  
    type(c_ptr), value w )
```

49.20.1.11 gsl_filter_rmedian()

```
integer(c_int) function gsl_filter_rmedian (  
    integer(c_int), value endtype,  
    real(c_double), value alpha,  
    integer(c_size_t), value order,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value w )
```

49.20.1.12 gsl_filter_rmedian_alloc()

```
type(c_ptr) function gsl_filter_rmedian_alloc (  
    integer(c_size_t), value k )
```

49.20.1.13 gsl_filter_rmedian_free()

```
subroutine gsl_filter_rmedian_free (
    type(c_ptr), value w )
```

49.21 api/fit.finc File Reference

Functions/Subroutines

- integer(fgsl_int) function [fgsl_fit_linear](#) (x, xstride, y, ystride, n, c0, c1, cov00, cov01, cov11, sumsq)
- integer(fgsl_int) function [fgsl_fit_wlinear](#) (x, xstride, w, wstride, y, ystride, n, c0, c1, cov00, cov01, cov11, chisq)
- integer(fgsl_int) function [fgsl_fit_linear_est](#) (x, c0, c1, cov00, cov01, cov11, y, y_err)
- integer(fgsl_int) function [fgsl_fit_mul](#) (x, xstride, y, ystride, n, c1, cov11, sumsq)
- integer(fgsl_int) function [fgsl_fit_wmul](#) (x, xstride, w, wstride, y, ystride, n, c1, cov11, chisq)
- integer(fgsl_int) function [fgsl_fit_mul_est](#) (x, c1, cov11, y, y_err)

49.21.1 Function/Subroutine Documentation

49.21.1.1 fgsl_fit_linear()

```
integer(fgsl_int) function fgsl_fit_linear (
    real(fgsl_double), dimension(:), intent(in), target, contiguous x,
    integer(fgsl_size_t), intent(in) xstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous y,
    integer(fgsl_size_t), intent(in) ystride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(out) c0,
    real(fgsl_double), intent(out) c1,
    real(fgsl_double), intent(out) cov00,
    real(fgsl_double), intent(out) cov01,
    real(fgsl_double), intent(out) cov11,
    real(fgsl_double), intent(out) sumsq )
```

49.21.1.2 fgsl_fit_linear_est()

```
integer(fgsl_int) function fgsl_fit_linear_est (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) c0,
    real(fgsl_double), intent(in) c1,
    real(fgsl_double), intent(in) cov00,
    real(fgsl_double), intent(in) cov01,
    real(fgsl_double), intent(in) cov11,
    real(fgsl_double), intent(out) y,
    real(fgsl_double), intent(out) y_err )
```


49.21.1.3 fgsl_fit_mul()

```
integer(fgsl_int) function fgsl_fit_mul (
    real(fgsl_double), dimension(:), intent(in), target, contiguous x,
    integer(fgsl_size_t), intent(in) xstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous y,
    integer(fgsl_size_t), intent(in) ystride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(out) c1,
    real(fgsl_double), intent(out) cov11,
    real(fgsl_double), intent(out) sumsq )
```

49.21.1.4 fgsl_fit_mul_est()

```
integer(fgsl_int) function fgsl_fit_mul_est (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) c1,
    real(fgsl_double), intent(in) cov11,
    real(fgsl_double), intent(out) y,
    real(fgsl_double), intent(out) y_err )
```

49.21.1.5 fgsl_fit_wlinear()

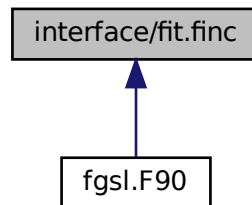
```
integer(fgsl_int) function fgsl_fit_wlinear (
    real(fgsl_double), dimension(:), intent(in), target, contiguous x,
    integer(fgsl_size_t), intent(in) xstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,
    integer(fgsl_size_t), intent(in) wstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous y,
    integer(fgsl_size_t), intent(in) ystride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(out) c0,
    real(fgsl_double), intent(out) c1,
    real(fgsl_double), intent(out) cov00,
    real(fgsl_double), intent(out) cov01,
    real(fgsl_double), intent(out) cov11,
    real(fgsl_double), intent(out) chisq )
```

49.21.1.6 fgsl_fit_wmul()

```
integer(fgsl_int) function fgsl_fit_wmul (
    real(fgsl_double), dimension(:), intent(in), target, contiguous x,
    integer(fgsl_size_t), intent(in) xstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,
    integer(fgsl_size_t), intent(in) wstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous y,
    integer(fgsl_size_t), intent(in) ystride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(out) c1,
    real(fgsl_double), intent(out) cov11,
    real(fgsl_double), intent(out) chisq )
```

49.22 interface/fit.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- integer(c_int) function [gsl_fit_linear](#) (x, xstride, y, ystride, n, c0, c1, cov00, cov01, cov11, sumsq)
- integer(c_int) function [gsl_fit_wlinear](#) (x, xstride, w, wstride, y, ystride, n, c0, c1, cov00, cov01, cov11, chisq)
- integer(c_int) function [gsl_fit_linear_est](#) (x, c0, c1, cov00, cov01, cov11, y, y_err)
- integer(c_int) function [gsl_fit_mul](#) (x, xstride, y, ystride, n, c1, cov11, sumsq)
- integer(c_int) function [gsl_fit_wmul](#) (x, xstride, w, wstride, y, ystride, n, c1, cov11, chisq)
- integer(c_int) function [gsl_fit_mul_est](#) (x, c1, cov11, y, y_err)

49.22.1 Function/Subroutine Documentation

49.22.1.1 [gsl_fit_linear\(\)](#)

```

integer(c_int) function gsl_fit_linear (
    type(c_ptr), value x,
    integer(c_size_t), value xstride,
    type(c_ptr), value y,
    integer(c_size_t), value ystride,
    integer(c_size_t), value n,
    real(c_double) c0,
    real(c_double) c1,
    real(c_double) cov00,
    real(c_double) cov01,
    real(c_double) cov11,
    real(c_double) sumsq )
  
```

49.22.1.2 `gsl_fit_linear_est()`

```
integer(c_int) function gsl_fit_linear_est (  
    real(c_double), value x,  
    real(c_double), value c0,  
    real(c_double), value c1,  
    real(c_double), value cov00,  
    real(c_double), value cov01,  
    real(c_double), value cov11,  
    real(c_double) y,  
    real(c_double) y_err )
```

49.22.1.3 `gsl_fit_mul()`

```
integer(c_int) function gsl_fit_mul (  
    type(c_ptr), value x,  
    integer(c_size_t), value xstride,  
    type(c_ptr), value y,  
    integer(c_size_t), value ystride,  
    integer(c_size_t), value n,  
    real(c_double) c1,  
    real(c_double) cov11,  
    real(c_double) sumsq )
```

49.22.1.4 `gsl_fit_mul_est()`

```
integer(c_int) function gsl_fit_mul_est (  
    real(c_double), value x,  
    real(c_double), value c1,  
    real(c_double), value cov11,  
    real(c_double) y,  
    real(c_double) y_err )
```

49.22.1.5 `gsl_fit_wlinear()`

```
integer(c_int) function gsl_fit_wlinear (  
    type(c_ptr), value x,  
    integer(c_size_t), value xstride,  
    type(c_ptr), value w,  
    integer(c_size_t), value wstride,  
    type(c_ptr), value y,  
    integer(c_size_t), value ystride,  
    integer(c_size_t), value n,  
    real(c_double) c0,  
    real(c_double) c1,  
    real(c_double) cov00,  
    real(c_double) cov01,  
    real(c_double) cov11,  
    real(c_double) chisq )
```

49.22.1.6 gsl_fit_wmul()

```
integer(c_int) function gsl_fit_wmul (
    type(c_ptr), value x,
    integer(c_size_t), value xstride,
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value y,
    integer(c_size_t), value ystride,
    integer(c_size_t), value n,
    real(c_double) c1,
    real(c_double) cov11,
    real(c_double) chisq )
```

49.23 api/histogram.finc File Reference

Functions/Subroutines

- type(fgsl_histogram) function [fgsl_histogram_alloc](#) (n)
- integer(fgsl_int) function [fgsl_histogram_set_ranges](#) (h, range)
- integer(fgsl_int) function [fgsl_histogram_set_ranges_uniform](#) (h, xmin, xmax)
- subroutine [fgsl_histogram_free](#) (h)
- integer(fgsl_int) function [fgsl_histogram_memcpy](#) (dest, src)
- type(fgsl_histogram) function [fgsl_histogram_clone](#) (src)
- integer(fgsl_int) function [fgsl_histogram_increment](#) (h, x)
- integer(fgsl_int) function [fgsl_histogram_accumulate](#) (h, x, weight)
- real(fgsl_double) function [fgsl_histogram_get](#) (h, i)
- integer(fgsl_int) function [fgsl_histogram_get_range](#) (h, i, lower, upper)
- real(fgsl_double) function [fgsl_histogram_max](#) (h)
- real(fgsl_double) function [fgsl_histogram_min](#) (h)
- integer(fgsl_size_t) function [fgsl_histogram_bins](#) (h)
- subroutine [fgsl_histogram_reset](#) (h)
- integer(fgsl_int) function [fgsl_histogram_find](#) (h, x, i)
- real(fgsl_double) function [fgsl_histogram_max_val](#) (h)
- integer(fgsl_size_t) function [fgsl_histogram_max_bin](#) (h)
- real(fgsl_double) function [fgsl_histogram_min_val](#) (h)
- integer(fgsl_size_t) function [fgsl_histogram_min_bin](#) (h)
- real(fgsl_double) function [fgsl_histogram_mean](#) (h)
- real(fgsl_double) function [fgsl_histogram_sigma](#) (h)
- real(fgsl_double) function [fgsl_histogram_sum](#) (h)
- real(fgsl_double) function [fgsl_histogram_equal_bins_p](#) (h1, h2)
- real(fgsl_double) function [fgsl_histogram_add](#) (h1, h2)
- real(fgsl_double) function [fgsl_histogram_sub](#) (h1, h2)
- real(fgsl_double) function [fgsl_histogram_mul](#) (h1, h2)
- real(fgsl_double) function [fgsl_histogram_div](#) (h1, h2)
- integer(fgsl_int) function [fgsl_histogram_scale](#) (h, scale)
- integer(fgsl_int) function [fgsl_histogram_shift](#) (h, offset)
- integer(fgsl_int) function [fgsl_histogram_fwrite](#) (stream, h)
- integer(fgsl_int) function [fgsl_histogram_fread](#) (stream, h)
- integer(fgsl_int) function [fgsl_histogram_fprintf](#) (stream, h, range_format, bin_format)
- integer(fgsl_int) function [fgsl_histogram_fscanf](#) (stream, h)
- type(fgsl_histogram_pdf) function [fgsl_histogram_pdf_alloc](#) (n)
- integer(fgsl_int) function [fgsl_histogram_pdf_init](#) (p, h)

- subroutine [fgsl_histogram_pdf_free](#) (p)
- real(fgsl_double) function [fgsl_histogram_pdf_sample](#) (p, r)
- type(fgsl_histogram2d) function [fgsl_histogram2d_alloc](#) (nx, ny)
- integer(fgsl_int) function [fgsl_histogram2d_set_ranges](#) (h, xrange, yrange)
- integer(fgsl_int) function [fgsl_histogram2d_set_ranges_uniform](#) (h, xmin, xmax, ymin, ymax)
- subroutine [fgsl_histogram2d_free](#) (h)
- integer(fgsl_int) function [fgsl_histogram2d_memcpy](#) (dest, src)
- type(fgsl_histogram2d) function [fgsl_histogram2d_clone](#) (src)
- integer(fgsl_int) function [fgsl_histogram2d_increment](#) (h, x, y)
- integer(fgsl_int) function [fgsl_histogram2d_accumulate](#) (h, x, y, weight)
- real(fgsl_double) function [fgsl_histogram2d_get](#) (h, i, j)
- integer(fgsl_int) function [fgsl_histogram2d_get_xrange](#) (h, i, xlower, xupper)
- integer(fgsl_int) function [fgsl_histogram2d_get_yrange](#) (h, i, ylower, yupper)
- real(fgsl_double) function [fgsl_histogram2d_xmax](#) (h)
- real(fgsl_double) function [fgsl_histogram2d_xmin](#) (h)
- integer(fgsl_size_t) function [fgsl_histogram2d_nx](#) (h)
- real(fgsl_double) function [fgsl_histogram2d_ymax](#) (h)
- real(fgsl_double) function [fgsl_histogram2d_ymin](#) (h)
- integer(fgsl_size_t) function [fgsl_histogram2d_ny](#) (h)
- subroutine [fgsl_histogram2d_reset](#) (h)
- integer(fgsl_int) function [fgsl_histogram2d_find](#) (h, x, y, i, j)
- real(fgsl_double) function [fgsl_histogram2d_max_val](#) (h)
- subroutine [fgsl_histogram2d_max_bin](#) (h, i, j)
- real(fgsl_double) function [fgsl_histogram2d_min_val](#) (h)
- subroutine [fgsl_histogram2d_min_bin](#) (h, i, j)
- real(fgsl_double) function [fgsl_histogram2d_xmean](#) (h)
- real(fgsl_double) function [fgsl_histogram2d_ymean](#) (h)
- real(fgsl_double) function [fgsl_histogram2d_xsigma](#) (h)
- real(fgsl_double) function [fgsl_histogram2d_ysigma](#) (h)
- real(fgsl_double) function [fgsl_histogram2d_cov](#) (h)
- real(fgsl_double) function [fgsl_histogram2d_sum](#) (h)
- real(fgsl_double) function [fgsl_histogram2d_equal_bins_p](#) (h1, h2)
- real(fgsl_double) function [fgsl_histogram2d_add](#) (h1, h2)
- real(fgsl_double) function [fgsl_histogram2d_sub](#) (h1, h2)
- real(fgsl_double) function [fgsl_histogram2d_mul](#) (h1, h2)
- real(fgsl_double) function [fgsl_histogram2d_div](#) (h1, h2)
- integer(fgsl_int) function [fgsl_histogram2d_scale](#) (h, scale)
- integer(fgsl_int) function [fgsl_histogram2d_shift](#) (h, offset)
- integer(fgsl_int) function [fgsl_histogram2d_fwrite](#) (stream, h)
- integer(fgsl_int) function [fgsl_histogram2d_fread](#) (stream, h)
- integer(fgsl_int) function [fgsl_histogram2d_fprintf](#) (stream, h, range_format, bin_format)
- integer(fgsl_int) function [fgsl_histogram2d_fscanf](#) (stream, h)
- type(fgsl_histogram2d_pdf) function [fgsl_histogram2d_pdf_alloc](#) (nx, ny)
- integer(fgsl_int) function [fgsl_histogram2d_pdf_init](#) (p, h)
- subroutine [fgsl_histogram2d_pdf_free](#) (p)
- integer(fgsl_int) function [fgsl_histogram2d_pdf_sample](#) (p, r1, r2, x, y)
- logical function [fgsl_histogram_status](#) (histogram)

49.23.1 Function/Subroutine Documentation

49.23.1.1 fgsl_histogram2d_accumulate()

```
integer(fgsl_int) function fgsl_histogram2d_accumulate (
    type(fgsl_histogram2d), intent(inout) h,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    real(fgsl_double), intent(in) weight )
```

49.23.1.2 fgsl_histogram2d_add()

```
real(fgsl_double) function fgsl_histogram2d_add (
    type(fgsl_histogram2d), intent(inout) h1,
    type(fgsl_histogram2d), intent(in) h2 )
```

49.23.1.3 fgsl_histogram2d_alloc()

```
type(fgsl_histogram2d) function fgsl_histogram2d_alloc (
    integer(fgsl_size_t), intent(in) nx,
    integer(fgsl_size_t), intent(in) ny )
```

49.23.1.4 fgsl_histogram2d_clone()

```
type(fgsl_histogram2d) function fgsl_histogram2d_clone (
    type(fgsl_histogram2d), intent(in) src )
```

49.23.1.5 fgsl_histogram2d_cov()

```
real(fgsl_double) function fgsl_histogram2d_cov (
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.6 fgsl_histogram2d_div()

```
real(fgsl_double) function fgsl_histogram2d_div (
    type(fgsl_histogram2d), intent(inout) h1,
    type(fgsl_histogram2d), intent(in) h2 )
```

49.23.1.7 fgsl_histogram2d_equal_bins_p()

```
real(fgsl_double) function fgsl_histogram2d_equal_bins_p (
    type(fgsl_histogram2d), intent(in) h1,
    type(fgsl_histogram2d), intent(in) h2 )
```

49.23.1.8 fgsl_histogram2d_find()

```
integer(fgsl_int) function fgsl_histogram2d_find (
    type(fgsl_histogram2d), intent(in) h,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    integer(fgsl_size_t), intent(out) i,
    integer(fgsl_size_t), intent(out) j )
```

49.23.1.9 fgsl_histogram2d_fprintf()

```
integer(fgsl_int) function fgsl_histogram2d_fprintf (
    type(fgsl_file), intent(in) stream,
    type(fgsl_histogram2d), intent(in) h,
    character(kind=fgsl_char, len=*), intent(in) range_format,
    character(kind=fgsl_char, len=*), intent(in) bin_format )
```

49.23.1.10 fgsl_histogram2d_fread()

```
integer(fgsl_int) function fgsl_histogram2d_fread (
    type(fgsl_file), intent(in) stream,
    type(fgsl_histogram2d), intent(inout) h )
```

49.23.1.11 fgsl_histogram2d_free()

```
subroutine fgsl_histogram2d_free (
    type(fgsl_histogram2d), intent(inout) h )
```

49.23.1.12 fgsl_histogram2d_fscanf()

```
integer(fgsl_int) function fgsl_histogram2d_fscanf (
    type(fgsl_file), intent(in) stream,
    type(fgsl_histogram2d), intent(inout) h )
```

49.23.1.13 fgsl_histogram2d_fwrite()

```
integer(fgsl_int) function fgsl_histogram2d_fwrite (
    type(fgsl_file), intent(in) stream,
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.14 fgsl_histogram2d_get()

```
real(fgsl_double) function fgsl_histogram2d_get (
    type(fgsl_histogram2d), intent(in) h,
    integer(fgsl_size_t), intent(in) i,
    integer(fgsl_size_t), intent(in) j )
```

49.23.1.15 fgsl_histogram2d_get_xrange()

```
integer(fgsl_int) function fgsl_histogram2d_get_xrange (
    type(fgsl_histogram2d), intent(in) h,
    integer(fgsl_size_t), intent(in) i,
    real(fgsl_double), intent(out) xlower,
    real(fgsl_double), intent(out) xupper )
```

49.23.1.16 fgsl_histogram2d_get_yrange()

```
integer(fgsl_int) function fgsl_histogram2d_get_yrange (
    type(fgsl_histogram2d), intent(in) h,
    integer(fgsl_size_t), intent(in) i,
    real(fgsl_double), intent(out) ylower,
    real(fgsl_double), intent(out) yupper )
```

49.23.1.17 fgsl_histogram2d_increment()

```
integer(fgsl_int) function fgsl_histogram2d_increment (
    type(fgsl_histogram2d), intent(inout) h,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y )
```


49.23.1.18 fgsl_histogram2d_max_bin()

```
subroutine fgsl_histogram2d_max_bin (
    type(fgsl_histogram2d), intent(in) h,
    integer(fgsl_size_t), intent(out) i,
    integer(fgsl_size_t), intent(out) j )
```

49.23.1.19 fgsl_histogram2d_max_val()

```
real(fgsl_double) function fgsl_histogram2d_max_val (
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.20 fgsl_histogram2d_memcpy()

```
integer(fgsl_int) function fgsl_histogram2d_memcpy (
    type(fgsl_histogram2d), intent(inout) dest,
    type(fgsl_histogram2d), intent(in) src )
```

49.23.1.21 fgsl_histogram2d_min_bin()

```
subroutine fgsl_histogram2d_min_bin (
    type(fgsl_histogram2d), intent(in) h,
    integer(fgsl_size_t), intent(out) i,
    integer(fgsl_size_t), intent(out) j )
```

49.23.1.22 fgsl_histogram2d_min_val()

```
real(fgsl_double) function fgsl_histogram2d_min_val (
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.23 fgsl_histogram2d_mul()

```
real(fgsl_double) function fgsl_histogram2d_mul (
    type(fgsl_histogram2d), intent(inout) h1,
    type(fgsl_histogram2d), intent(in) h2 )
```

49.23.1.24 fgsl_histogram2d_nx()

```
integer(fgsl_size_t) function fgsl_histogram2d_nx (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.25 fgsl_histogram2d_ny()

```
integer(fgsl_size_t) function fgsl_histogram2d_ny (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.26 fgsl_histogram2d_pdf_alloc()

```
type(fgsl_histogram2d_pdf) function fgsl_histogram2d_pdf_alloc (  
    integer(fgsl_size_t), intent(in) nx,  
    integer(fgsl_size_t), intent(in) ny )
```

49.23.1.27 fgsl_histogram2d_pdf_free()

```
subroutine fgsl_histogram2d_pdf_free (  
    type(fgsl_histogram2d_pdf), intent(inout) p )
```

49.23.1.28 fgsl_histogram2d_pdf_init()

```
integer(fgsl_int) function fgsl_histogram2d_pdf_init (  
    type(fgsl_histogram2d_pdf), intent(inout) p,  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.29 fgsl_histogram2d_pdf_sample()

```
integer(fgsl_int) function fgsl_histogram2d_pdf_sample (  
    type(fgsl_histogram2d_pdf), intent(in) p,  
    real(fgsl_double), intent(in) r1,  
    real(fgsl_double), intent(in) r2,  
    real(fgsl_double), intent(out) x,  
    real(fgsl_double), intent(out) y )
```

49.23.1.30 fgsl_histogram2d_reset()

```
subroutine fgsl_histogram2d_reset (
    type(fgsl_histogram2d), intent(inout) h )
```

49.23.1.31 fgsl_histogram2d_scale()

```
integer(fgsl_int) function fgsl_histogram2d_scale (
    type(fgsl_histogram2d), intent(inout) h,
    real(fgsl_double), intent(in) scale )
```

49.23.1.32 fgsl_histogram2d_set_ranges()

```
integer(fgsl_int) function fgsl_histogram2d_set_ranges (
    type(fgsl_histogram2d), intent(inout) h,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xrange,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yrange )
```

49.23.1.33 fgsl_histogram2d_set_ranges_uniform()

```
integer(fgsl_int) function fgsl_histogram2d_set_ranges_uniform (
    type(fgsl_histogram2d), intent(inout) h,
    real(fgsl_double), intent(in) xmin,
    real(fgsl_double), intent(in) xmax,
    real(fgsl_double), intent(in) ymin,
    real(fgsl_double), intent(in) ymax )
```

49.23.1.34 fgsl_histogram2d_shift()

```
integer(fgsl_int) function fgsl_histogram2d_shift (
    type(fgsl_histogram2d), intent(inout) h,
    real(fgsl_double), intent(in) offset )
```

49.23.1.35 fgsl_histogram2d_sub()

```
real(fgsl_double) function fgsl_histogram2d_sub (
    type(fgsl_histogram2d), intent(inout) h1,
    type(fgsl_histogram2d), intent(in) h2 )
```

49.23.1.36 fgsl_histogram2d_sum()

```
real(fgsl_double) function fgsl_histogram2d_sum (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.37 fgsl_histogram2d_xmax()

```
real(fgsl_double) function fgsl_histogram2d_xmax (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.38 fgsl_histogram2d_xmean()

```
real(fgsl_double) function fgsl_histogram2d_xmean (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.39 fgsl_histogram2d_xmin()

```
real(fgsl_double) function fgsl_histogram2d_xmin (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.40 fgsl_histogram2d_xsigma()

```
real(fgsl_double) function fgsl_histogram2d_xsigma (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.41 fgsl_histogram2d_ymax()

```
real(fgsl_double) function fgsl_histogram2d_ymax (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.42 fgsl_histogram2d_ymean()

```
real(fgsl_double) function fgsl_histogram2d_ymean (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.43 fgsl_histogram2d_ymin()

```
real(fgsl_double) function fgsl_histogram2d_ymin (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.44 fgsl_histogram2d_ysigma()

```
real(fgsl_double) function fgsl_histogram2d_ysigma (  
    type(fgsl_histogram2d), intent(in) h )
```

49.23.1.45 fgsl_histogram_accumulate()

```
integer(fgsl_int) function fgsl_histogram_accumulate (  
    type(fgsl_histogram), intent(inout) h,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) weight )
```

49.23.1.46 fgsl_histogram_add()

```
real(fgsl_double) function fgsl_histogram_add (  
    type(fgsl_histogram), intent(inout) h1,  
    type(fgsl_histogram), intent(in) h2 )
```

49.23.1.47 fgsl_histogram_alloc()

```
type(fgsl_histogram) function fgsl_histogram_alloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.23.1.48 fgsl_histogram_bins()

```
integer(fgsl_size_t) function fgsl_histogram_bins (  
    type(fgsl_histogram), intent(in) h )
```

49.23.1.49 fgsl_histogram_clone()

```
type(fgsl_histogram) function fgsl_histogram_clone (
    type(fgsl_histogram), intent(in) src )
```

49.23.1.50 fgsl_histogram_div()

```
real(fgsl_double) function fgsl_histogram_div (
    type(fgsl_histogram), intent(inout) h1,
    type(fgsl_histogram), intent(in) h2 )
```

49.23.1.51 fgsl_histogram_equal_bins_p()

```
real(fgsl_double) function fgsl_histogram_equal_bins_p (
    type(fgsl_histogram), intent(in) h1,
    type(fgsl_histogram), intent(in) h2 )
```

49.23.1.52 fgsl_histogram_find()

```
integer(fgsl_int) function fgsl_histogram_find (
    type(fgsl_histogram), intent(in) h,
    real(fgsl_double), intent(in) x,
    integer(fgsl_size_t), intent(out) i )
```

49.23.1.53 fgsl_histogram_fprintf()

```
integer(fgsl_int) function fgsl_histogram_fprintf (
    type(fgsl_file), intent(in) stream,
    type(fgsl_histogram), intent(in) h,
    character(kind=fgsl_char, len=*), intent(in) range_format,
    character(kind=fgsl_char, len=*), intent(in) bin_format )
```

49.23.1.54 fgsl_histogram_fread()

```
integer(fgsl_int) function fgsl_histogram_fread (
    type(fgsl_file), intent(in) stream,
    type(fgsl_histogram), intent(inout) h )
```

49.23.1.55 fgsl_histogram_free()

```
subroutine fgsl_histogram_free (
    type(fgsl_histogram), intent(inout) h )
```

49.23.1.56 fgsl_histogram_fscanf()

```
integer(fgsl_int) function fgsl_histogram_fscanf (
    type(fgsl_file), intent(in) stream,
    type(fgsl_histogram), intent(inout) h )
```

49.23.1.57 fgsl_histogram_fwrite()

```
integer(fgsl_int) function fgsl_histogram_fwrite (
    type(fgsl_file), intent(in) stream,
    type(fgsl_histogram), intent(in) h )
```

49.23.1.58 fgsl_histogram_get()

```
real(fgsl_double) function fgsl_histogram_get (
    type(fgsl_histogram), intent(in) h,
    integer(fgsl_size_t), intent(in) i )
```

49.23.1.59 fgsl_histogram_get_range()

```
integer(fgsl_int) function fgsl_histogram_get_range (
    type(fgsl_histogram), intent(in) h,
    integer(fgsl_size_t), intent(in) i,
    real(fgsl_double), intent(out) lower,
    real(fgsl_double), intent(out) upper )
```

49.23.1.60 fgsl_histogram_increment()

```
integer(fgsl_int) function fgsl_histogram_increment (
    type(fgsl_histogram), intent(inout) h,
    real(fgsl_double), intent(in) x )
```

49.23.1.61 fgsl_histogram_max()

```
real(fgsl_double) function fgsl_histogram_max (  
    type(fgsl_histogram), intent(in) h )
```

49.23.1.62 fgsl_histogram_max_bin()

```
integer(fgsl_size_t) function fgsl_histogram_max_bin (  
    type(fgsl_histogram), intent(in) h )
```

49.23.1.63 fgsl_histogram_max_val()

```
real(fgsl_double) function fgsl_histogram_max_val (  
    type(fgsl_histogram), intent(in) h )
```

49.23.1.64 fgsl_histogram_mean()

```
real(fgsl_double) function fgsl_histogram_mean (  
    type(fgsl_histogram), intent(in) h )
```

49.23.1.65 fgsl_histogram_memcpy()

```
integer(fgsl_int) function fgsl_histogram_memcpy (  
    type(fgsl_histogram), intent(inout) dest,  
    type(fgsl_histogram), intent(in) src )
```

49.23.1.66 fgsl_histogram_min()

```
real(fgsl_double) function fgsl_histogram_min (  
    type(fgsl_histogram), intent(in) h )
```

49.23.1.67 fgsl_histogram_min_bin()

```
integer(fgsl_size_t) function fgsl_histogram_min_bin (  
    type(fgsl_histogram), intent(in) h )
```


49.23.1.68 fgsl_histogram_min_val()

```
real(fgsl_double) function fgsl_histogram_min_val (
    type(fgsl_histogram), intent(in) h )
```

49.23.1.69 fgsl_histogram_mul()

```
real(fgsl_double) function fgsl_histogram_mul (
    type(fgsl_histogram), intent(inout) h1,
    type(fgsl_histogram), intent(in) h2 )
```

49.23.1.70 fgsl_histogram_pdf_alloc()

```
type(fgsl_histogram_pdf) function fgsl_histogram_pdf_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.23.1.71 fgsl_histogram_pdf_free()

```
subroutine fgsl_histogram_pdf_free (
    type(fgsl_histogram_pdf), intent(inout) p )
```

49.23.1.72 fgsl_histogram_pdf_init()

```
integer(fgsl_int) function fgsl_histogram_pdf_init (
    type(fgsl_histogram_pdf), intent(inout) p,
    type(fgsl_histogram), intent(in) h )
```

49.23.1.73 fgsl_histogram_pdf_sample()

```
real(fgsl_double) function fgsl_histogram_pdf_sample (
    type(fgsl_histogram_pdf), intent(in) p,
    real(fgsl_double), intent(in) r )
```

49.23.1.74 fgsl_histogram_reset()

```
subroutine fgsl_histogram_reset (
    type(fgsl_histogram), intent(inout) h )
```

49.23.1.75 fgsl_histogram_scale()

```
integer(fgsl_int) function fgsl_histogram_scale (
    type(fgsl_histogram), intent(inout) h,
    real(fgsl_double), intent(in) scale )
```

49.23.1.76 fgsl_histogram_set_ranges()

```
integer(fgsl_int) function fgsl_histogram_set_ranges (
    type(fgsl_histogram), intent(inout) h,
    real(fgsl_double), dimension(:), intent(in), target, contiguous range )
```

49.23.1.77 fgsl_histogram_set_ranges_uniform()

```
integer(fgsl_int) function fgsl_histogram_set_ranges_uniform (
    type(fgsl_histogram), intent(inout) h,
    real(fgsl_double), intent(in) xmin,
    real(fgsl_double), intent(in) xmax )
```

49.23.1.78 fgsl_histogram_shift()

```
integer(fgsl_int) function fgsl_histogram_shift (
    type(fgsl_histogram), intent(inout) h,
    real(fgsl_double), intent(in) offset )
```

49.23.1.79 fgsl_histogram_sigma()

```
real(fgsl_double) function fgsl_histogram_sigma (
    type(fgsl_histogram), intent(in) h )
```

49.23.1.80 fgsl_histogram_status()

```
logical function fgsl_histogram_status (
    type(fgsl_histogram), intent(in) histogram )
```

49.23.1.81 fgsl_histogram_sub()

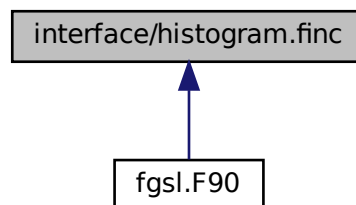
```
real(fgsl_double) function fgsl_histogram_sub (
    type(fgsl_histogram), intent(inout) h1,
    type(fgsl_histogram), intent(in) h2 )
```

49.23.1.82 fgsl_histogram_sum()

```
real(fgsl_double) function fgsl_histogram_sum (
    type(fgsl_histogram), intent(in) h )
```

49.24 interface/histogram.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- type(c_ptr) function [gsl_histogram_alloc](#) (n)
- integer(c_int) function [gsl_histogram_set_ranges](#) (h, range, size)
- integer(c_int) function [gsl_histogram_set_ranges_uniform](#) (h, xmin, xmax)
- subroutine [gsl_histogram_free](#) (h)
- integer(c_int) function [gsl_histogram_memcpy](#) (dest, src)
- type(c_ptr) function [gsl_histogram_clone](#) (src)
- integer(c_int) function [gsl_histogram_increment](#) (h, x)
- integer(c_int) function [gsl_histogram_accumulate](#) (h, x, weight)
- real(c_double) function [gsl_histogram_get](#) (h, i)

- integer(c_int) function [gsl_histogram_get_range](#) (h, i, lower, upper)
- real(c_double) function [gsl_histogram_max](#) (h)
- real(c_double) function [gsl_histogram_min](#) (h)
- integer(c_size_t) function [gsl_histogram_bins](#) (h)
- subroutine [gsl_histogram_reset](#) (h)
- integer(c_int) function [gsl_histogram_find](#) (h, x, i)
- real(c_double) function [gsl_histogram_max_val](#) (h)
- integer(c_size_t) function [gsl_histogram_max_bin](#) (h)
- real(c_double) function [gsl_histogram_min_val](#) (h)
- integer(c_size_t) function [gsl_histogram_min_bin](#) (h)
- real(c_double) function [gsl_histogram_mean](#) (h)
- real(c_double) function [gsl_histogram_sigma](#) (h)
- real(c_double) function [gsl_histogram_sum](#) (h)
- integer(c_int) function [gsl_histogram_equal_bins_p](#) (h1, h2)
- integer(c_int) function [gsl_histogram_add](#) (h1, h2)
- integer(c_int) function [gsl_histogram_sub](#) (h1, h2)
- integer(c_int) function [gsl_histogram_mul](#) (h1, h2)
- integer(c_int) function [gsl_histogram_div](#) (h1, h2)
- integer(c_int) function [gsl_histogram_scale](#) (h, scale)
- integer(c_int) function [gsl_histogram_shift](#) (h, offset)
- integer(c_int) function [gsl_histogram_fwrite](#) (stream, h)
- integer(c_int) function [gsl_histogram_fread](#) (stream, h)
- integer(c_int) function [gsl_histogram_fprintf](#) (stream, h, range_format, bin_format)
- integer(c_int) function [gsl_histogram_fscanf](#) (stream, h)
- type(c_ptr) function [gsl_histogram_pdf_alloc](#) (n)
- integer(c_int) function [gsl_histogram_pdf_init](#) (p, h)
- subroutine [gsl_histogram_pdf_free](#) (p)
- real(c_double) function [gsl_histogram_pdf_sample](#) (p, r)
- type(c_ptr) function [gsl_histogram2d_alloc](#) (nx, ny)
- integer(c_int) function [gsl_histogram2d_set_ranges](#) (h, xrange, xsize, yrange, ysize)
- integer(c_int) function [gsl_histogram2d_set_ranges_uniform](#) (h, xmin, xmax, ymin, ymax)
- subroutine [gsl_histogram2d_free](#) (h)
- integer(c_int) function [gsl_histogram2d_memcpy](#) (dest, src)
- type(c_ptr) function [gsl_histogram2d_clone](#) (src)
- integer(c_int) function [gsl_histogram2d_increment](#) (h, x, y)
- integer(c_int) function [gsl_histogram2d_accumulate](#) (h, x, y, weight)
- real(c_double) function [gsl_histogram2d_get](#) (h, i, j)
- integer(c_int) function [gsl_histogram2d_get_xrange](#) (h, i, xlower, xupper)
- integer(c_int) function [gsl_histogram2d_get_yrange](#) (h, i, ylower, yupper)
- real(c_double) function [gsl_histogram2d_xmax](#) (h)
- real(c_double) function [gsl_histogram2d_xmin](#) (h)
- integer(c_size_t) function [gsl_histogram2d_nx](#) (h)
- real(c_double) function [gsl_histogram2d_ymax](#) (h)
- real(c_double) function [gsl_histogram2d_ymin](#) (h)
- integer(c_size_t) function [gsl_histogram2d_ny](#) (h)
- subroutine [gsl_histogram2d_reset](#) (h)
- integer(c_int) function [gsl_histogram2d_find](#) (h, x, y, i, j)
- real(c_double) function [gsl_histogram2d_max_val](#) (h)
- subroutine [gsl_histogram2d_max_bin](#) (h, i, j)
- real(c_double) function [gsl_histogram2d_min_val](#) (h)
- subroutine [gsl_histogram2d_min_bin](#) (h, i, j)
- real(c_double) function [gsl_histogram2d_xmean](#) (h)
- real(c_double) function [gsl_histogram2d_ymean](#) (h)
- real(c_double) function [gsl_histogram2d_xsigma](#) (h)
- real(c_double) function [gsl_histogram2d_ysigma](#) (h)

- real(c_double) function [gsl_histogram2d_cov](#) (h)
- real(c_double) function [gsl_histogram2d_sum](#) (h)
- integer(c_int) function [gsl_histogram2d_equal_bins_p](#) (h1, h2)
- integer(c_int) function [gsl_histogram2d_add](#) (h1, h2)
- integer(c_int) function [gsl_histogram2d_sub](#) (h1, h2)
- integer(c_int) function [gsl_histogram2d_mul](#) (h1, h2)
- integer(c_int) function [gsl_histogram2d_div](#) (h1, h2)
- integer(c_int) function [gsl_histogram2d_scale](#) (h, scale)
- integer(c_int) function [gsl_histogram2d_shift](#) (h, offset)
- integer(c_int) function [gsl_histogram2d_fwrite](#) (stream, h)
- integer(c_int) function [gsl_histogram2d_fread](#) (stream, h)
- integer(c_int) function [gsl_histogram2d_fprintf](#) (stream, h, range_format, bin_format)
- integer(c_int) function [gsl_histogram2d_fscanf](#) (stream, h)
- type(c_ptr) function [gsl_histogram2d_pdf_alloc](#) (nx, ny)
- integer(c_int) function [gsl_histogram2d_pdf_init](#) (p, h)
- subroutine [gsl_histogram2d_pdf_free](#) (p)
- integer(c_int) function [gsl_histogram2d_pdf_sample](#) (p, r1, r2, x, y)

49.24.1 Function/Subroutine Documentation

49.24.1.1 [gsl_histogram2d_accumulate\(\)](#)

```
integer(c_int) function gsl_histogram2d_accumulate (
    type(c_ptr), value h,
    real(c_double), value x,
    real(c_double), value y,
    real(c_double), value weight )
```

49.24.1.2 [gsl_histogram2d_add\(\)](#)

```
integer(c_int) function gsl_histogram2d_add (
    type(c_ptr), value h1,
    type(c_ptr), value h2 )
```

49.24.1.3 [gsl_histogram2d_alloc\(\)](#)

```
type(c_ptr) function gsl_histogram2d_alloc (
    integer(c_size_t), value nx,
    integer(c_size_t), value ny )
```

49.24.1.4 `gsl_histogram2d_clone()`

```
type(c_ptr) function gsl_histogram2d_clone (  
    type(c_ptr), value src )
```

49.24.1.5 `gsl_histogram2d_cov()`

```
real(c_double) function gsl_histogram2d_cov (  
    type(c_ptr), value h )
```

49.24.1.6 `gsl_histogram2d_div()`

```
integer(c_int) function gsl_histogram2d_div (  
    type(c_ptr), value h1,  
    type(c_ptr), value h2 )
```

49.24.1.7 `gsl_histogram2d_equal_bins_p()`

```
integer(c_int) function gsl_histogram2d_equal_bins_p (  
    type(c_ptr), value h1,  
    type(c_ptr), value h2 )
```

49.24.1.8 `gsl_histogram2d_find()`

```
integer(c_int) function gsl_histogram2d_find (  
    type(c_ptr), value h,  
    real(c_double), value x,  
    real(c_double), value y,  
    integer(c_size_t), intent(out) i,  
    integer(c_size_t), intent(out) j )
```

49.24.1.9 `gsl_histogram2d_fprintf()`

```
integer(c_int) function gsl_histogram2d_fprintf (  
    type(c_ptr), value stream,  
    type(c_ptr), value h,  
    character(kind=c_char), dimension(*) range_format,  
    character(kind=c_char), dimension(*) bin_format )
```

49.24.1.10 gsl_histogram2d_fread()

```
integer(c_int) function gsl_histogram2d_fread (
    type(c_ptr), value stream,
    type(c_ptr), value h )
```

49.24.1.11 gsl_histogram2d_free()

```
subroutine gsl_histogram2d_free (
    type(c_ptr), value h )
```

49.24.1.12 gsl_histogram2d_fscanf()

```
integer(c_int) function gsl_histogram2d_fscanf (
    type(c_ptr), value stream,
    type(c_ptr), value h )
```

49.24.1.13 gsl_histogram2d_fwrite()

```
integer(c_int) function gsl_histogram2d_fwrite (
    type(c_ptr), value stream,
    type(c_ptr), value h )
```

49.24.1.14 gsl_histogram2d_get()

```
real(c_double) function gsl_histogram2d_get (
    type(c_ptr), value h,
    integer(c_size_t), value i,
    integer(c_size_t), value j )
```

49.24.1.15 gsl_histogram2d_get_xrange()

```
integer(c_int) function gsl_histogram2d_get_xrange (
    type(c_ptr), value h,
    integer(c_size_t), value i,
    real(c_double), intent(out) xlower,
    real(c_double), intent(out) xupper )
```

49.24.1.16 gsl_histogram2d_get_yrange()

```
integer(c_int) function gsl_histogram2d_get_yrange (
    type(c_ptr), value h,
    integer(c_size_t), value i,
    real(c_double), intent(out) ylower,
    real(c_double), intent(out) yupper )
```

49.24.1.17 gsl_histogram2d_increment()

```
integer(c_int) function gsl_histogram2d_increment (
    type(c_ptr), value h,
    real(c_double), value x,
    real(c_double), value y )
```

49.24.1.18 gsl_histogram2d_max_bin()

```
subroutine gsl_histogram2d_max_bin (
    type(c_ptr), value h,
    integer(c_size_t), intent(out) i,
    integer(c_size_t), intent(out) j )
```

49.24.1.19 gsl_histogram2d_max_val()

```
real(c_double) function gsl_histogram2d_max_val (
    type(c_ptr), value h )
```

49.24.1.20 gsl_histogram2d_memcpy()

```
integer(c_int) function gsl_histogram2d_memcpy (
    type(c_ptr), value dest,
    type(c_ptr), value src )
```

49.24.1.21 gsl_histogram2d_min_bin()

```
subroutine gsl_histogram2d_min_bin (
    type(c_ptr), value h,
    integer(c_size_t), intent(out) i,
    integer(c_size_t), intent(out) j )
```


49.24.1.22 gsl_histogram2d_min_val()

```
real(c_double) function gsl_histogram2d_min_val (  
    type(c_ptr), value h )
```

49.24.1.23 gsl_histogram2d_mul()

```
integer(c_int) function gsl_histogram2d_mul (  
    type(c_ptr), value h1,  
    type(c_ptr), value h2 )
```

49.24.1.24 gsl_histogram2d_nx()

```
integer(c_size_t) function gsl_histogram2d_nx (  
    type(c_ptr), value h )
```

49.24.1.25 gsl_histogram2d_ny()

```
integer(c_size_t) function gsl_histogram2d_ny (  
    type(c_ptr), value h )
```

49.24.1.26 gsl_histogram2d_pdf_alloc()

```
type(c_ptr) function gsl_histogram2d_pdf_alloc (  
    integer(c_size_t), value nx,  
    integer(c_size_t), value ny )
```

49.24.1.27 gsl_histogram2d_pdf_free()

```
subroutine gsl_histogram2d_pdf_free (  
    type(c_ptr), value p )
```

49.24.1.28 gsl_histogram2d_pdf_init()

```
integer(c_int) function gsl_histogram2d_pdf_init (  
    type(c_ptr), value p,  
    type(c_ptr), value h )
```

49.24.1.29 gsl_histogram2d_pdf_sample()

```
integer(c_int) function gsl_histogram2d_pdf_sample (  
    type(c_ptr), value p,  
    real(c_double), value r1,  
    real(c_double), value r2,  
    real(c_double), intent(out) x,  
    real(c_double), intent(out) y )
```

49.24.1.30 gsl_histogram2d_reset()

```
subroutine gsl_histogram2d_reset (  
    type(c_ptr), value h )
```

49.24.1.31 gsl_histogram2d_scale()

```
integer(c_int) function gsl_histogram2d_scale (  
    type(c_ptr), value h,  
    real(c_double), value scale )
```

49.24.1.32 gsl_histogram2d_set_ranges()

```
integer(c_int) function gsl_histogram2d_set_ranges (  
    type(c_ptr), value h,  
    type(c_ptr), value xrange,  
    integer(c_size_t), value xsize,  
    type(c_ptr), value yrange,  
    integer(c_size_t), value ysize )
```

49.24.1.33 gsl_histogram2d_set_ranges_uniform()

```
integer(c_int) function gsl_histogram2d_set_ranges_uniform (
    type(c_ptr), value h,
    real(c_double), value xmin,
    real(c_double), value xmax,
    real(c_double), value ymin,
    real(c_double), value ymax )
```

49.24.1.34 gsl_histogram2d_shift()

```
integer(c_int) function gsl_histogram2d_shift (
    type(c_ptr), value h,
    real(c_double), value offset )
```

49.24.1.35 gsl_histogram2d_sub()

```
integer(c_int) function gsl_histogram2d_sub (
    type(c_ptr), value h1,
    type(c_ptr), value h2 )
```

49.24.1.36 gsl_histogram2d_sum()

```
real(c_double) function gsl_histogram2d_sum (
    type(c_ptr), value h )
```

49.24.1.37 gsl_histogram2d_xmax()

```
real(c_double) function gsl_histogram2d_xmax (
    type(c_ptr), value h )
```

49.24.1.38 gsl_histogram2d_xmean()

```
real(c_double) function gsl_histogram2d_xmean (
    type(c_ptr), value h )
```

49.24.1.39 gsl_histogram2d_xmin()

```
real(c_double) function gsl_histogram2d_xmin (  
    type(c_ptr), value h )
```

49.24.1.40 gsl_histogram2d_xsigma()

```
real(c_double) function gsl_histogram2d_xsigma (  
    type(c_ptr), value h )
```

49.24.1.41 gsl_histogram2d_ymax()

```
real(c_double) function gsl_histogram2d_ymax (  
    type(c_ptr), value h )
```

49.24.1.42 gsl_histogram2d_ymean()

```
real(c_double) function gsl_histogram2d_ymean (  
    type(c_ptr), value h )
```

49.24.1.43 gsl_histogram2d_ymin()

```
real(c_double) function gsl_histogram2d_ymin (  
    type(c_ptr), value h )
```

49.24.1.44 gsl_histogram2d_ysigma()

```
real(c_double) function gsl_histogram2d_ysigma (  
    type(c_ptr), value h )
```

49.24.1.45 gsl_histogram_accumulate()

```
integer(c_int) function gsl_histogram_accumulate (  
    type(c_ptr), value h,  
    real(c_double), value x,  
    real(c_double), value weight )
```

49.24.1.46 gsl_histogram_add()

```
integer(c_int) function gsl_histogram_add (  
    type(c_ptr), value h1,  
    type(c_ptr), value h2 )
```

49.24.1.47 gsl_histogram_alloc()

```
type(c_ptr) function gsl_histogram_alloc (  
    integer(c_size_t), value n )
```

49.24.1.48 gsl_histogram_bins()

```
integer(c_size_t) function gsl_histogram_bins (  
    type(c_ptr), value h )
```

49.24.1.49 gsl_histogram_clone()

```
type(c_ptr) function gsl_histogram_clone (  
    type(c_ptr), value src )
```

49.24.1.50 gsl_histogram_div()

```
integer(c_int) function gsl_histogram_div (  
    type(c_ptr), value h1,  
    type(c_ptr), value h2 )
```

49.24.1.51 gsl_histogram_equal_bins_p()

```
integer(c_int) function gsl_histogram_equal_bins_p (  
    type(c_ptr), value h1,  
    type(c_ptr), value h2 )
```

49.24.1.52 gsl_histogram_find()

```
integer(c_int) function gsl_histogram_find (  
    type(c_ptr), value h,  
    real(c_double), value x,  
    integer(c_size_t), intent(out) i )
```

49.24.1.53 gsl_histogram_fprintf()

```
integer(c_int) function gsl_histogram_fprintf (  
    type(c_ptr), value stream,  
    type(c_ptr), value h,  
    character(kind=c_char), dimension(*) range_format,  
    character(kind=c_char), dimension(*) bin_format )
```

49.24.1.54 gsl_histogram_fread()

```
integer(c_int) function gsl_histogram_fread (  
    type(c_ptr), value stream,  
    type(c_ptr), value h )
```

49.24.1.55 gsl_histogram_free()

```
subroutine gsl_histogram_free (  
    type(c_ptr), value h )
```

49.24.1.56 gsl_histogram_fscanf()

```
integer(c_int) function gsl_histogram_fscanf (  
    type(c_ptr), value stream,  
    type(c_ptr), value h )
```

49.24.1.57 gsl_histogram_fwrite()

```
integer(c_int) function gsl_histogram_fwrite (  
    type(c_ptr), value stream,  
    type(c_ptr), value h )
```

49.24.1.58 gsl_histogram_get()

```
real(c_double) function gsl_histogram_get (
    type(c_ptr), value h,
    integer(c_size_t), value i )
```

49.24.1.59 gsl_histogram_get_range()

```
integer(c_int) function gsl_histogram_get_range (
    type(c_ptr), value h,
    integer(c_size_t), value i,
    real(c_double), intent(out) lower,
    real(c_double), intent(out) upper )
```

49.24.1.60 gsl_histogram_increment()

```
integer(c_int) function gsl_histogram_increment (
    type(c_ptr), value h,
    real(c_double), value x )
```

49.24.1.61 gsl_histogram_max()

```
real(c_double) function gsl_histogram_max (
    type(c_ptr), value h )
```

49.24.1.62 gsl_histogram_max_bin()

```
integer(c_size_t) function gsl_histogram_max_bin (
    type(c_ptr), value h )
```

49.24.1.63 gsl_histogram_max_val()

```
real(c_double) function gsl_histogram_max_val (
    type(c_ptr), value h )
```

49.24.1.64 gsl_histogram_mean()

```
real(c_double) function gsl_histogram_mean (  
    type(c_ptr), value h )
```

49.24.1.65 gsl_histogram_memcpy()

```
integer(c_int) function gsl_histogram_memcpy (  
    type(c_ptr), value dest,  
    type(c_ptr), value src )
```

49.24.1.66 gsl_histogram_min()

```
real(c_double) function gsl_histogram_min (  
    type(c_ptr), value h )
```

49.24.1.67 gsl_histogram_min_bin()

```
integer(c_size_t) function gsl_histogram_min_bin (  
    type(c_ptr), value h )
```

49.24.1.68 gsl_histogram_min_val()

```
real(c_double) function gsl_histogram_min_val (  
    type(c_ptr), value h )
```

49.24.1.69 gsl_histogram_mul()

```
integer(c_int) function gsl_histogram_mul (  
    type(c_ptr), value h1,  
    type(c_ptr), value h2 )
```

49.24.1.70 gsl_histogram_pdf_alloc()

```
type(c_ptr) function gsl_histogram_pdf_alloc (  
    integer(c_size_t), value n )
```


49.24.1.71 gsl_histogram_pdf_free()

```
subroutine gsl_histogram_pdf_free (
    type(c_ptr), value p )
```

49.24.1.72 gsl_histogram_pdf_init()

```
integer(c_int) function gsl_histogram_pdf_init (
    type(c_ptr), value p,
    type(c_ptr), value h )
```

49.24.1.73 gsl_histogram_pdf_sample()

```
real(c_double) function gsl_histogram_pdf_sample (
    type(c_ptr), value p,
    real(c_double), value r )
```

49.24.1.74 gsl_histogram_reset()

```
subroutine gsl_histogram_reset (
    type(c_ptr), value h )
```

49.24.1.75 gsl_histogram_scale()

```
integer(c_int) function gsl_histogram_scale (
    type(c_ptr), value h,
    real(c_double), value scale )
```

49.24.1.76 gsl_histogram_set_ranges()

```
integer(c_int) function gsl_histogram_set_ranges (
    type(c_ptr), value h,
    type(c_ptr), value range,
    integer(c_size_t), value size )
```

49.24.1.77 `gsl_histogram_set_ranges_uniform()`

```
integer(c_int) function gsl_histogram_set_ranges_uniform (
    type(c_ptr), value h,
    real(c_double), value xmin,
    real(c_double), value xmax )
```

49.24.1.78 `gsl_histogram_shift()`

```
integer(c_int) function gsl_histogram_shift (
    type(c_ptr), value h,
    real(c_double), value offset )
```

49.24.1.79 `gsl_histogram_sigma()`

```
real(c_double) function gsl_histogram_sigma (
    type(c_ptr), value h )
```

49.24.1.80 `gsl_histogram_sub()`

```
integer(c_int) function gsl_histogram_sub (
    type(c_ptr), value h1,
    type(c_ptr), value h2 )
```

49.24.1.81 `gsl_histogram_sum()`

```
real(c_double) function gsl_histogram_sum (
    type(c_ptr), value h )
```

49.25 `api/ieee.finc` File Reference

Functions/Subroutines

- subroutine [fgsl_ieee_fprintf_float](#) (stream, x)
- subroutine [fgsl_ieee_fprintf_double](#) (stream, x)
- subroutine [fgsl_ieee_printf_float](#) (x)
- subroutine [fgsl_ieee_printf_double](#) (x)
- subroutine [fgsl_ieee_env_setup](#) ()

49.25.1 Function/Subroutine Documentation

49.25.1.1 fgsl_ieee_env_setup()

```
subroutine fgsl_ieee_env_setup
```

49.25.1.2 fgsl_ieee_fprintf_double()

```
subroutine fgsl_ieee_fprintf_double (
    type(fgsl_file), intent(in) stream,
    real(fgsl_double) x )
```

49.25.1.3 fgsl_ieee_fprintf_float()

```
subroutine fgsl_ieee_fprintf_float (
    type(fgsl_file), intent(in) stream,
    real(fgsl_float) x )
```

49.25.1.4 fgsl_ieee_printf_double()

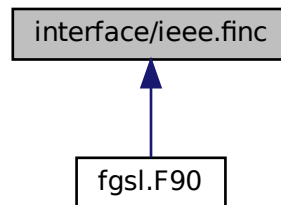
```
subroutine fgsl_ieee_printf_double (
    real(fgsl_double) x )
```

49.25.1.5 fgsl_ieee_printf_float()

```
subroutine fgsl_ieee_printf_float (
    real(fgsl_float) x )
```

49.26 interface/ieee.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- subroutine [gsl_ieee_fprintf_float](#) (stream, x)
- subroutine [gsl_ieee_fprintf_double](#) (stream, x)
- subroutine [gsl_ieee_printf_float](#) (x)
- subroutine [gsl_ieee_printf_double](#) (x)
- subroutine [gsl_ieee_env_setup](#) ()

49.26.1 Function/Subroutine Documentation

49.26.1.1 [gsl_ieee_env_setup\(\)](#)

```
subroutine gsl_ieee_env_setup
```

49.26.1.2 [gsl_ieee_fprintf_double\(\)](#)

```
subroutine gsl_ieee_fprintf_double (  
    type(c_ptr), value stream,  
    real(c_double) x )
```

49.26.1.3 [gsl_ieee_fprintf_float\(\)](#)

```
subroutine gsl_ieee_fprintf_float (  
    type(c_ptr), value stream,  
    real(c_float) x )
```

49.26.1.4 gsl_ieee_printf_double()

```
subroutine gsl_ieee_printf_double (
    real(c_double) x )
```

49.26.1.5 gsl_ieee_printf_float()

```
subroutine gsl_ieee_printf_float (
    real(c_float) x )
```

49.27 api/integration.finc File Reference**Functions/Subroutines**

- integer(fgsl_int) function [fgsl_integration_qng](#) (f, a, b, epsabs, epsrel, result, abserr, neval)
- type(fgsl_integration_workspace) function [fgsl_integration_workspace_alloc](#) (n)
- subroutine [fgsl_integration_workspace_free](#) (w)
- integer(fgsl_int) function [fgsl_integration_qag](#) (f, a, b, epsabs, epsrel, limit, key, workspace, result, abserr)
- integer(fgsl_int) function [fgsl_integration_qags](#) (f, a, b, epsabs, epsrel, limit, workspace, result, abserr)
- integer(fgsl_int) function [fgsl_integration_qagp](#) (f, pts, epsabs, epsrel, limit, workspace, result, abserr)
- integer(fgsl_int) function [fgsl_integration_qagi](#) (f, epsabs, epsrel, limit, workspace, result, abserr)
- integer(fgsl_int) function [fgsl_integration_qagiu](#) (f, a, epsabs, epsrel, limit, workspace, result, abserr)
- integer(fgsl_int) function [fgsl_integration_qagil](#) (f, b, epsabs, epsrel, limit, workspace, result, abserr)
- integer(fgsl_int) function [fgsl_integration_qawc](#) (f, a, b, c, epsabs, epsrel, limit, workspace, result, abserr)
- type(fgsl_integration_qaws_table) function [fgsl_integration_qaws_table_alloc](#) (alpha, beta, mu, nu)
- integer(c_int) function [fgsl_integration_qaws_table_set](#) (t, alpha, beta, mu, nu)
- subroutine [fgsl_integration_qaws_table_free](#) (w)
- integer(fgsl_int) function [fgsl_integration_qaws](#) (f, a, b, t, epsabs, epsrel, limit, workspace, result, abserr)
- type(fgsl_integration_qawo_table) function [fgsl_integration_qawo_table_alloc](#) (omega, l, sine, n)
- integer(fgsl_int) function [fgsl_integration_qawo_table_set](#) (t, omega, l, sine)
- integer(fgsl_int) function [fgsl_integration_qawo_table_set_length](#) (t, l)
- subroutine [fgsl_integration_qawo_table_free](#) (w)
- integer(fgsl_int) function [fgsl_integration_qawo](#) (f, a, epsabs, epsrel, limit, workspace, wf, result, abserr)
- integer(fgsl_int) function [fgsl_integration_qawf](#) (f, a, epsabs, limit, workspace, cyc_workspace, wf, result, abserr)
- type(fgsl_integration_cquad_workspace) function [fgsl_integration_cquad_workspace_alloc](#) (n)
- subroutine [fgsl_integration_cquad_workspace_free](#) (w)
- integer(fgsl_int) function [fgsl_integration_cquad](#) (f, a, b, epsabs, epsrel, workspace, result, abserr, nevals)
- type(fgsl_integration_romberg_workspace) function [fgsl_integration_romberg_alloc](#) (n)
- subroutine [fgsl_integration_romberg_free](#) (w)
- integer(fgsl_int) function [fgsl_integration_romberg](#) (f, a, b, epsabs, epsrel, result, neval, w)
- type(fgsl_integration_glfixed_table) function [fgsl_integration_glfixed_table_alloc](#) (n)
- subroutine [fgsl_integration_glfixed_table_free](#) (t)
- real(fgsl_double) function [fgsl_integration_glfixed](#) (f, a, b, t)
- integer(fgsl_int) function [fgsl_integration_glfixed_point](#) (a, b, i, xi, wi, t)
- type(fgsl_integration_fixed_workspace) function [fgsl_integration_fixed_alloc](#) (t, n, a, b, alpha, beta)
- subroutine [fgsl_integration_fixed_free](#) (w)
- integer(fgsl_size_t) function [fgsl_integration_fixed_n](#) (w)
- real(fgsl_double) function, dimension(:), pointer [fgsl_integration_fixed_nodes](#) (w)

- `real(fgsl_double)` function, `dimension(:)`, pointer [fgsl_integration_fixed_weights](#) (`w`)
- `integer(fgsl_int)` function [fgsl_integration_fixed](#) (`func`, `result`, `w`)
- logical function [fgsl_integration_workspace_status](#) (`integration_workspace`)
- logical function [fgsl_integration_qaws_table_status](#) (`integration_qaws_table`)
- logical function [fgsl_integration_qawo_table_status](#) (`integration_qawo_table`)
- logical function [fgsl_integration_cquad_workspace_status](#) (`integration_workspace`)
- logical function [fgsl_integration_glfixed_table_status](#) (`integration_glfixed_table`)
- `integer(fgsl_size_t)` function [fgsl_sizeof_integration_workspace](#) (`w`)
- `integer(fgsl_size_t)` function [fgsl_sizeof_integration_qaws_table](#) (`w`)
- `integer(fgsl_size_t)` function [fgsl_sizeof_integration_qawo_table](#) (`w`)

49.27.1 Function/Subroutine Documentation

49.27.1.1 `fgsl_integration_cquad()`

```
integer(fgsl_int) function fgsl_integration_cquad (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel,
    type(fgsl_integration_cquad_workspace), intent(inout) workspace,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr,
    integer(fgsl_size_t), intent(inout) nevals )
```

49.27.1.2 `fgsl_integration_cquad_workspace_alloc()`

```
type(fgsl_integration_cquad_workspace) function fgsl_integration_cquad_workspace_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.27.1.3 `fgsl_integration_cquad_workspace_free()`

```
subroutine fgsl_integration_cquad_workspace_free (
    type(fgsl_integration_cquad_workspace), intent(inout) w )
```

49.27.1.4 `fgsl_integration_cquad_workspace_status()`

```
logical function fgsl_integration_cquad_workspace_status (
    type(fgsl_integration_cquad_workspace), intent(in) integration_workspace )
```

49.27.1.5 fgsl_integration_fixed()

```
integer(fgsl_int) function fgsl_integration_fixed (
    type(fgsl_function), intent(inout) func,
    real(fgsl_double), target result,
    type(fgsl_integration_fixed_workspace), intent(in) w )
```

49.27.1.6 fgsl_integration_fixed_alloc()

```
type(fgsl_integration_fixed_workspace) function fgsl_integration_fixed_alloc (
    integer(fgsl_int), intent(in) t,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    real(fgsl_double), intent(in) alpha,
    real(fgsl_double), intent(in) beta )
```

49.27.1.7 fgsl_integration_fixed_free()

```
subroutine fgsl_integration_fixed_free (
    type(fgsl_integration_fixed_workspace), intent(inout) w )
```

49.27.1.8 fgsl_integration_fixed_n()

```
integer(fgsl_size_t) function fgsl_integration_fixed_n (
    type(fgsl_integration_fixed_workspace), intent(in) w )
```

49.27.1.9 fgsl_integration_fixed_nodes()

```
real(fgsl_double) function, dimension(:), pointer fgsl_integration_fixed_nodes (
    type(fgsl_integration_fixed_workspace), intent(in) w )
```

49.27.1.10 fgsl_integration_fixed_weights()

```
real(fgsl_double) function, dimension(:), pointer fgsl_integration_fixed_weights (
    type(fgsl_integration_fixed_workspace), intent(in) w )
```

49.27.1.11 fgsl_integration_glfixed()

```
real(fgsl_double) function fgsl_integration_glfixed (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    type(fgsl_integration_glfixed_table), intent(in) t )
```

49.27.1.12 fgsl_integration_glfixed_point()

```
integer(fgsl_int) function fgsl_integration_glfixed_point (
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    integer(fgsl_size_t), intent(in) i,
    real(fgsl_double), intent(inout) xi,
    real(fgsl_double), intent(inout) wi,
    type(fgsl_integration_glfixed_table), intent(in) t )
```

49.27.1.13 fgsl_integration_glfixed_table_alloc()

```
type(fgsl_integration_glfixed_table) function fgsl_integration_glfixed_table_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.27.1.14 fgsl_integration_glfixed_table_free()

```
subroutine fgsl_integration_glfixed_table_free (
    type(fgsl_integration_glfixed_table) t )
```

49.27.1.15 fgsl_integration_glfixed_table_status()

```
logical function fgsl_integration_glfixed_table_status (
    type(fgsl_integration_glfixed_table), intent(in) integration_glfixed_table )
```


49.27.1.16 fgsl_integration_qag()

```
integer(fgsl_int) function fgsl_integration_qag (  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) epsabs,  
    real(fgsl_double), intent(in) epsrel,  
    integer(fgsl_size_t), intent(in) limit,  
    integer(fgsl_int), intent(in) key,  
    type(fgsl_integration_workspace), intent(inout) workspace,  
    real(fgsl_double), intent(out) result,  
    real(fgsl_double), intent(out) abserr )
```

49.27.1.17 fgsl_integration_qagi()

```
integer(fgsl_int) function fgsl_integration_qagi (  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) epsabs,  
    real(fgsl_double), intent(in) epsrel,  
    integer(fgsl_size_t), intent(in) limit,  
    type(fgsl_integration_workspace), intent(inout) workspace,  
    real(fgsl_double), intent(out) result,  
    real(fgsl_double), intent(out) abserr )
```

49.27.1.18 fgsl_integration_qagil()

```
integer(fgsl_int) function fgsl_integration_qagil (  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) epsabs,  
    real(fgsl_double), intent(in) epsrel,  
    integer(fgsl_size_t), intent(in) limit,  
    type(fgsl_integration_workspace), intent(inout) workspace,  
    real(fgsl_double), intent(out) result,  
    real(fgsl_double), intent(out) abserr )
```

49.27.1.19 fgsl_integration_qagiu()

```
integer(fgsl_int) function fgsl_integration_qagiu (  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) epsabs,  
    real(fgsl_double), intent(in) epsrel,  
    integer(fgsl_size_t), intent(in) limit,  
    type(fgsl_integration_workspace), intent(inout) workspace,  
    real(fgsl_double), intent(out) result,  
    real(fgsl_double), intent(out) abserr )
```

49.27.1.20 fgsl_integration_qagp()

```
integer(fgsl_int) function fgsl_integration_qagp (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), dimension(:), intent(in), target, contiguous pts,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel,
    integer(fgsl_size_t), intent(in) limit,
    type(fgsl_integration_workspace), intent(inout) workspace,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.27.1.21 fgsl_integration_qags()

```
integer(fgsl_int) function fgsl_integration_qags (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel,
    integer(fgsl_size_t), intent(in) limit,
    type(fgsl_integration_workspace), intent(inout) workspace,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.27.1.22 fgsl_integration_qawc()

```
integer(fgsl_int) function fgsl_integration_qawc (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    real(fgsl_double), intent(in) c,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel,
    integer(fgsl_size_t), intent(in) limit,
    type(fgsl_integration_workspace), intent(inout) workspace,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.27.1.23 fgsl_integration_qawf()

```
integer(fgsl_int) function fgsl_integration_qawf (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) epsabs,
    integer(fgsl_size_t), intent(in) limit,
    type(fgsl_integration_workspace), intent(inout) workspace,
    type(fgsl_integration_workspace), intent(inout) cyc_workspace,
    type(fgsl_integration_qawo_table), intent(in) wf,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.27.1.24 fgsl_integration_qawo()

```
integer(fgsl_int) function fgsl_integration_qawo (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel,
    integer(fgsl_size_t), intent(in) limit,
    type(fgsl_integration_workspace), intent(inout) workspace,
    type(fgsl_integration_qawo_table), intent(in) wf,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.27.1.25 fgsl_integration_qawo_table_alloc()

```
type(fgsl_integration_qawo_table) function fgsl_integration_qawo_table_alloc (
    real(fgsl_double), intent(in) omega,
    real(fgsl_double), intent(in) l,
    integer(fgsl_int), intent(in) sine,
    integer(fgsl_size_t), intent(in) n )
```

49.27.1.26 fgsl_integration_qawo_table_free()

```
subroutine fgsl_integration_qawo_table_free (
    type(fgsl_integration_qawo_table), intent(inout) w )
```

49.27.1.27 fgsl_integration_qawo_table_set()

```
integer(fgsl_int) function fgsl_integration_qawo_table_set (
    type(fgsl_integration_qawo_table), intent(inout) t,
    real(fgsl_double), intent(in) omega,
    real(fgsl_double), intent(in) l,
    integer(fgsl_int), intent(in) sine )
```

49.27.1.28 fgsl_integration_qawo_table_set_length()

```
integer(fgsl_int) function fgsl_integration_qawo_table_set_length (
    type(fgsl_integration_qawo_table), intent(inout) t,
    real(fgsl_double), intent(in) l )
```

49.27.1.29 fgsl_integration_qawo_table_status()

```
logical function fgsl_integration_qawo_table_status (
    type(fgsl_integration_qawo_table), intent(in) integration_qawo_table )
```

49.27.1.30 fgsl_integration_qaws()

```
integer(fgsl_int) function fgsl_integration_qaws (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    type(fgsl_integration_qaws_table), intent(in) t,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel,
    integer(fgsl_size_t), intent(in) limit,
    type(fgsl_integration_workspace), intent(inout) workspace,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.27.1.31 fgsl_integration_qaws_table_alloc()

```
type(fgsl_integration_qaws_table) function fgsl_integration_qaws_table_alloc (
    real(fgsl_double), intent(in) alpha,
    real(fgsl_double), intent(in) beta,
    integer(fgsl_int), intent(in) mu,
    integer(fgsl_int), intent(in) nu )
```

49.27.1.32 fgsl_integration_qaws_table_free()

```
subroutine fgsl_integration_qaws_table_free (
    type(fgsl_integration_qaws_table), intent(inout) w )
```

49.27.1.33 fgsl_integration_qaws_table_set()

```
integer(c_int) function fgsl_integration_qaws_table_set (
    type(fgsl_integration_qaws_table) t,
    real(fgsl_double), intent(in) alpha,
    real(fgsl_double), intent(in) beta,
    integer(fgsl_int), intent(in) mu,
    integer(fgsl_int), intent(in) nu )
```

49.27.1.34 fgsl_integration_qaws_table_status()

```
logical function fgsl_integration_qaws_table_status (
    type(fgsl_integration_qaws_table), intent(in) integration_qaws_table )
```

49.27.1.35 fgsl_integration_qng()

```
integer(fgsl_int) function fgsl_integration_qng (
    type(fgsl_function), intent(in) f,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr,
    integer(fgsl_size_t), intent(inout) neval )
```

49.27.1.36 fgsl_integration_romberg()

```
integer(fgsl_int) function fgsl_integration_romberg (
    type(fgsl_function) f,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel,
    real(fgsl_double), intent(inout) result,
    integer(c_size_t), intent(inout) neval,
    type(fgsl_integration_romberg_workspace), intent(inout) w )
```

49.27.1.37 fgsl_integration_romberg_alloc()

```
type(fgsl_integration_romberg_workspace) function fgsl_integration_romberg_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.27.1.38 fgsl_integration_romberg_free()

```
subroutine fgsl_integration_romberg_free (
    type(fgsl_integration_romberg_workspace), intent(inout) w )
```

49.27.1.39 fgsl_integration_workspace_alloc()

```
type(fgsl_integration_workspace) function fgsl_integration_workspace_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.27.1.40 fgsl_integration_workspace_free()

```
subroutine fgsl_integration_workspace_free (
    type(fgsl_integration_workspace), intent(inout) w )
```

49.27.1.41 fgsl_integration_workspace_status()

```
logical function fgsl_integration_workspace_status (
    type(fgsl_integration_workspace), intent(in) integration_workspace )
```

49.27.1.42 fgsl_sizeof_integration_qawo_table()

```
integer(fgsl_size_t) function fgsl_sizeof_integration_qawo_table (
    type(fgsl_integration_qawo_table), intent(in) w )
```

49.27.1.43 fgsl_sizeof_integration_qaws_table()

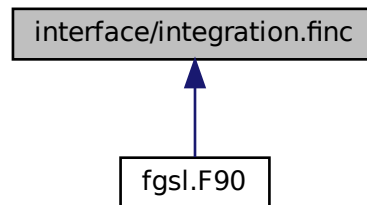
```
integer(fgsl_size_t) function fgsl_sizeof_integration_qaws_table (
    type(fgsl_integration_qaws_table), intent(in) w )
```

49.27.1.44 fgsl_sizeof_integration_workspace()

```
integer(fgsl_size_t) function fgsl_sizeof_integration_workspace (
    type(fgsl_integration_workspace), intent(in) w )
```

49.28 interface/integration.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- integer(c_int) function [gsl_integration_qng](#) (f, a, b, epsabs, epsrel, result, abserr, neval)
- type(c_ptr) function [gsl_integration_workspace_alloc](#) (n)
- subroutine [gsl_integration_workspace_free](#) (w)
- integer(c_int) function [gsl_integration_qag](#) (f, a, b, epsabs, epsrel, limit, key, workspace, result, abserr)
- integer(c_int) function [gsl_integration_qags](#) (f, a, b, epsabs, epsrel, limit, workspace, result, abserr)
- integer(c_int) function [gsl_integration_qagp](#) (f, pts, npts, epsabs, epsrel, limit, workspace, result, abserr)
- integer(c_int) function [gsl_integration_qagi](#) (f, epsabs, epsrel, limit, workspace, result, abserr)
- integer(c_int) function [gsl_integration_qagiu](#) (f, a, epsabs, epsrel, limit, workspace, result, abserr)
- integer(c_int) function [gsl_integration_qagil](#) (f, b, epsabs, epsrel, limit, workspace, result, abserr)
- integer(c_int) function [gsl_integration_qawc](#) (f, a, b, c, epsabs, epsrel, limit, workspace, result, abserr)
- type(c_ptr) function [gsl_integration_qaws_table_alloc](#) (alpha, beta, mu, nu)
- integer(c_int) function [gsl_integration_qaws_table_set](#) (t, alpha, beta, mu, nu)
- subroutine [gsl_integration_qaws_table_free](#) (w)
- integer(c_int) function [gsl_integration_qaws](#) (f, a, b, t, epsabs, epsrel, limit, workspace, result, abserr)
- type(c_ptr) function [gsl_integration_qawo_table_alloc](#) (omega, l, sine, n)
- integer(c_int) function [gsl_integration_qawo_table_set](#) (t, omega, l, sine)
- integer(c_int) function [gsl_integration_qawo_table_set_length](#) (t, l)
- subroutine [gsl_integration_qawo_table_free](#) (w)
- integer(c_int) function [gsl_integration_qawo](#) (f, a, epsabs, epsrel, limit, workspace, wf, result, abserr)
- integer(c_int) function [gsl_integration_qawf](#) (f, a, epsabs, limit, workspace, cyc_workspace, wf, result, abserr)
- type(c_ptr) function [gsl_integration_cquad_workspace_alloc](#) (n)
- subroutine [gsl_integration_cquad_workspace_free](#) (w)
- integer(c_int) function [gsl_integration_cquad](#) (f, a, b, epsabs, epsrel, workspace, result, abserr, nevals)
- type(c_ptr) function [gsl_integration_romberg_alloc](#) (n)
- subroutine [gsl_integration_romberg_free](#) (w)
- integer(c_int) function [gsl_integration_romberg](#) (f, a, b, epsabs, epsrel, result, neval, w)
- type(c_ptr) function [gsl_integration_glfixed_table_alloc](#) (n)
- subroutine [gsl_integration_glfixed_table_free](#) (t)
- real(c_double) function [gsl_integration_glfixed](#) (f, a, b, t)
- integer(c_int) function [gsl_integration_glfixed_point](#) (a, b, i, xi, wi, t)
- subroutine [gsl_integration_fixed_free](#) (w)
- integer(c_size_t) function [gsl_integration_fixed_n](#) (w)
- type(c_ptr) function [gsl_integration_fixed_nodes](#) (w)

- type(c_ptr) function [gsl_integration_fixed_weights](#) (w)
- integer(c_int) function [gsl_integration_fixed](#) (func, result, w)
- integer(c_size_t) function [gsl_aux_sizeof_integration_workspace](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_integration_qaws_table](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_integration_qawo_table](#) ()
- type(c_ptr) function [gsl_aux_integration_fixed_alloc](#) (t, n, a, b, alpha, beta)

49.28.1 Function/Subroutine Documentation

49.28.1.1 [gsl_aux_integration_fixed_alloc\(\)](#)

```
type(c_ptr) function gsl_aux_integration_fixed_alloc (
    integer(c_int), value t,
    integer(c_size_t), value n,
    real(c_double), value a,
    real(c_double), value b,
    real(c_double), value alpha,
    real(c_double), value beta )
```

49.28.1.2 [gsl_aux_sizeof_integration_qawo_table\(\)](#)

```
integer(c_size_t) function gsl_aux_sizeof_integration_qawo_table
```

49.28.1.3 [gsl_aux_sizeof_integration_qaws_table\(\)](#)

```
integer(c_size_t) function gsl_aux_sizeof_integration_qaws_table
```

49.28.1.4 [gsl_aux_sizeof_integration_workspace\(\)](#)

```
integer(c_size_t) function gsl_aux_sizeof_integration_workspace
```


49.28.1.5 `gsl_integration_cquad()`

```
integer(c_int) function gsl_integration_cquad (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    type(c_ptr), value workspace,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr,  
    integer(c_size_t) nevals )
```

49.28.1.6 `gsl_integration_cquad_workspace_alloc()`

```
type(c_ptr) function gsl_integration_cquad_workspace_alloc (  
    integer(c_size_t), value n )
```

49.28.1.7 `gsl_integration_cquad_workspace_free()`

```
subroutine gsl_integration_cquad_workspace_free (  
    type(c_ptr), value w )
```

49.28.1.8 `gsl_integration_fixed()`

```
integer(c_int) function gsl_integration_fixed (  
    type(c_ptr), value func,  
    type(c_ptr), value result,  
    type(c_ptr), value w )
```

49.28.1.9 `gsl_integration_fixed_free()`

```
subroutine gsl_integration_fixed_free (  
    type(c_ptr), value w )
```

49.28.1.10 `gsl_integration_fixed_n()`

```
integer(c_size_t) function gsl_integration_fixed_n (  
    type(c_ptr), value w )
```

49.28.1.11 gsl_integration_fixed_nodes()

```
type(c_ptr) function gsl_integration_fixed_nodes (  
    type(c_ptr), value w )
```

49.28.1.12 gsl_integration_fixed_weights()

```
type(c_ptr) function gsl_integration_fixed_weights (  
    type(c_ptr), value w )
```

49.28.1.13 gsl_integration_glfixed()

```
real(c_double) function gsl_integration_glfixed (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value b,  
    type(c_ptr), value t )
```

49.28.1.14 gsl_integration_glfixed_point()

```
integer(c_int) function gsl_integration_glfixed_point (  
    real(c_double), value a,  
    real(c_double), value b,  
    integer(c_size_t), value i,  
    real(c_double) xi,  
    real(c_double) wi,  
    type(c_ptr), value t )
```

49.28.1.15 gsl_integration_glfixed_table_alloc()

```
type(c_ptr) function gsl_integration_glfixed_table_alloc (  
    integer(c_size_t), value n )
```

49.28.1.16 gsl_integration_glfixed_table_free()

```
subroutine gsl_integration_glfixed_table_free (  
    type(c_ptr), value t )
```

49.28.1.17 gsl_integration_qag()

```
integer(c_int) function gsl_integration_qag (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    integer(c_size_t), value limit,  
    integer(c_int), value key,  
    type(c_ptr), value workspace,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.28.1.18 gsl_integration_qagi()

```
integer(c_int) function gsl_integration_qagi (  
    type(c_ptr), value f,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    integer(c_size_t), value limit,  
    type(c_ptr), value workspace,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.28.1.19 gsl_integration_qagil()

```
integer(c_int) function gsl_integration_qagil (  
    type(c_ptr), value f,  
    real(c_double), value b,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    integer(c_size_t), value limit,  
    type(c_ptr), value workspace,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.28.1.20 gsl_integration_qagi()

```
integer(c_int) function gsl_integration_qagi (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    integer(c_size_t), value limit,  
    type(c_ptr), value workspace,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.28.1.21 `gsl_integration_qagp()`

```
integer(c_int) function gsl_integration_qagp (  
    type(c_ptr), value f,  
    type(c_ptr), value pts,  
    integer(c_size_t), value npts,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    integer(c_size_t), value limit,  
    type(c_ptr), value workspace,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.28.1.22 `gsl_integration_qags()`

```
integer(c_int) function gsl_integration_qags (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    integer(c_size_t), value limit,  
    type(c_ptr), value workspace,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.28.1.23 `gsl_integration_qawc()`

```
integer(c_int) function gsl_integration_qawc (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value c,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    integer(c_size_t), value limit,  
    type(c_ptr), value workspace,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.28.1.24 gsl_integration_qawf()

```
integer(c_int) function gsl_integration_qawf (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value epsabs,  
    integer(c_size_t), value limit,  
    type(c_ptr), value workspace,  
    type(c_ptr), value cyc_workspace,  
    type(c_ptr), value wf,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.28.1.25 gsl_integration_qawo()

```
integer(c_int) function gsl_integration_qawo (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    integer(c_size_t), value limit,  
    type(c_ptr), value workspace,  
    type(c_ptr), value wf,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr )
```

49.28.1.26 gsl_integration_qawo_table_alloc()

```
type(c_ptr) function gsl_integration_qawo_table_alloc (  
    real(c_double), value omega,  
    real(c_double), value l,  
    integer(c_int), value sine,  
    integer(c_size_t), value n )
```

49.28.1.27 gsl_integration_qawo_table_free()

```
subroutine gsl_integration_qawo_table_free (  
    type(c_ptr), value w )
```

49.28.1.28 gsl_integration_qawo_table_set()

```
integer(c_int) function gsl_integration_qawo_table_set (
    type(c_ptr), value t,
    real(c_double), value omega,
    real(c_double), value l,
    integer(c_int), value sine )
```

49.28.1.29 gsl_integration_qawo_table_set_length()

```
integer(c_int) function gsl_integration_qawo_table_set_length (
    type(c_ptr), value t,
    real(c_double), value l )
```

49.28.1.30 gsl_integration_qaws()

```
integer(c_int) function gsl_integration_qaws (
    type(c_ptr), value f,
    real(c_double), value a,
    real(c_double), value b,
    type(c_ptr), value t,
    real(c_double), value epsabs,
    real(c_double), value epsrel,
    integer(c_size_t), value limit,
    type(c_ptr), value workspace,
    real(c_double), intent(out) result,
    real(c_double), intent(out) abserr )
```

49.28.1.31 gsl_integration_qaws_table_alloc()

```
type(c_ptr) function gsl_integration_qaws_table_alloc (
    real(c_double), value alpha,
    real(c_double), value beta,
    integer(c_int), value mu,
    integer(c_int), value nu )
```

49.28.1.32 gsl_integration_qaws_table_free()

```
subroutine gsl_integration_qaws_table_free (
    type(c_ptr), value w )
```

49.28.1.33 gsl_integration_qaws_table_set()

```
integer(c_int) function gsl_integration_qaws_table_set (  
    type(c_ptr), value t,  
    real(c_double), value alpha,  
    real(c_double), value beta,  
    integer(c_int), value mu,  
    integer(c_int), value nu )
```

49.28.1.34 gsl_integration_qng()

```
integer(c_int) function gsl_integration_qng (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) abserr,  
    integer(c_size_t), intent(inout) neval )
```

49.28.1.35 gsl_integration_romberg()

```
integer(c_int) function gsl_integration_romberg (  
    type(c_ptr), value f,  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    real(c_double) result,  
    integer(c_size_t) neval,  
    type(c_ptr), value w )
```

49.28.1.36 gsl_integration_romberg_alloc()

```
type(c_ptr) function gsl_integration_romberg_alloc (  
    integer(c_size_t), value n )
```

49.28.1.37 gsl_integration_romberg_free()

```
subroutine gsl_integration_romberg_free (  
    type(c_ptr), value w )
```

49.28.1.38 gsl_integration_workspace_alloc()

```
type(c_ptr) function gsl_integration_workspace_alloc (
    integer(c_size_t), value n )
```

49.28.1.39 gsl_integration_workspace_free()

```
subroutine gsl_integration_workspace_free (
    type(c_ptr), value w )
```

49.29 api/interp.finc File Reference**Functions/Subroutines**

- type(fgsl_interp) function [fgsl_interp_alloc](#) (interp_type, size)
- subroutine [fgsl_interp_free](#) (interp)
- type(fgsl_interp_accel) function [fgsl_interp_accel_alloc](#) ()
- subroutine [fgsl_interp_accel_free](#) (acc)
- logical function [fgsl_interp_status](#) (interp)
- logical function [fgsl_interp2d_status](#) (interp)
- logical function [fgsl_interp_accel_status](#) (acc)
- integer(fgsl_int) function [fgsl_interp_init](#) (interp, xa, ya)
- real(fgsl_double) function [fgsl_interp_eval](#) (interp, xa, ya, x, acc)
- integer(fgsl_int) function [fgsl_interp_eval_e](#) (interp, xa, ya, x, acc, y)
- real(fgsl_double) function [fgsl_interp_eval_integ](#) (interp, xa, ya, a, b, acc)
- integer(fgsl_int) function [fgsl_interp_eval_integ_e](#) (interp, xa, ya, a, b, acc, result)
- real(fgsl_double) function [fgsl_interp_eval_deriv](#) (interp, xa, ya, x, acc)
- integer(fgsl_int) function [fgsl_interp_eval_deriv_e](#) (interp, xa, ya, x, acc, d)
- real(fgsl_double) function [fgsl_interp_eval_deriv2](#) (interp, xa, ya, x, acc)
- integer(fgsl_int) function [fgsl_interp_eval_deriv2_e](#) (interp, xa, ya, x, acc, d2)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_interp_name](#) (interp)
- integer(fgsl_long) function [fgsl_interp_min_size](#) (interp)
- integer(fgsl_long) function [fgsl_interp_type_min_size](#) (interp)
- integer(fgsl_size_t) function [fgsl_interp_bsearch](#) (xa, x, index_lo, index_hi)
- integer(fgsl_size_t) function [fgsl_interp_accel_find](#) (acc, xa, x)
- type(fgsl_spline) function [fgsl_spline_alloc](#) (interp_type, size)
- subroutine [fgsl_spline_free](#) (spline)
- integer(fgsl_int) function [fgsl_spline_init](#) (spline, xa, ya)
- character(len=fgsl_strmax) function [fgsl_spline_name](#) (spline)
- integer(fgsl_long) function [fgsl_spline_min_size](#) (spline)
- real(fgsl_double) function [fgsl_spline_eval](#) (spline, x, acc)
- integer(fgsl_int) function [fgsl_spline_eval_e](#) (spline, x, acc, y)
- real(fgsl_double) function [fgsl_spline_eval_deriv](#) (spline, x, acc)
- integer(fgsl_int) function [fgsl_spline_eval_deriv_e](#) (spline, x, acc, y)
- real(fgsl_double) function [fgsl_spline_eval_deriv2](#) (spline, x, acc)
- integer(fgsl_int) function [fgsl_spline_eval_deriv2_e](#) (spline, x, acc, y)
- real(fgsl_double) function [fgsl_spline_eval_integ](#) (spline, a, b, acc)
- integer(fgsl_int) function [fgsl_spline_eval_integ_e](#) (spline, a, b, acc, y)
- logical function [fgsl_spline_status](#) (spline)

- logical function [fgsl_spline2d_status](#) (spline)
- integer(fgsl_size_t) function [fgsl_sizeof_interp](#) (w)
- type(fgsl_interp2d) function [fgsl_interp2d_alloc](#) (T, xsize, ysize)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_interp2d_name](#) (interp)
- integer(fgsl_size_t) function [fgsl_interp2d_min_size](#) (interp)
- integer(fgsl_size_t) function [fgsl_interp2d_type_min_size](#) (T)
- integer(fgsl_int) function [fgsl_interp2d_init](#) (interp, xa, ya, za)
- subroutine [fgsl_interp2d_free](#) (interp)
- real(fgsl_double) function [fgsl_interp2d_eval](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- real(fgsl_double) function [fgsl_interp2d_eval_extrap](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_interp2d_eval_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- integer(fgsl_int) function [fgsl_interp2d_eval_e_extrap](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- integer(fgsl_int) function [fgsl_interp2d_eval_extrap_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_interp2d_eval_deriv_x](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_interp2d_eval_deriv_x_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_interp2d_eval_deriv_y](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_interp2d_eval_deriv_y_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_interp2d_eval_deriv_xx](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_interp2d_eval_deriv_xx_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_interp2d_eval_deriv_yy](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_interp2d_eval_deriv_yy_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_interp2d_eval_deriv_xy](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_interp2d_eval_deriv_xy_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- type(fgsl_spline2d) function [fgsl_spline2d_alloc](#) (T, xsize, ysize)
- integer(fgsl_int) function [fgsl_spline2d_init](#) (interp, xa, ya, za)
- subroutine [fgsl_spline2d_free](#) (interp)
- real(fgsl_double) function [fgsl_spline2d_eval](#) (interp, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_spline2d_eval_e](#) (interp, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_spline2d_eval_extrap](#) (interp, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_spline2d_eval_extrap_e](#) (interp, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_spline2d_eval_deriv_x](#) (interp, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_spline2d_eval_deriv_x_e](#) (interp, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_spline2d_eval_deriv_y](#) (interp, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_spline2d_eval_deriv_y_e](#) (interp, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_spline2d_eval_deriv_xx](#) (interp, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_spline2d_eval_deriv_xx_e](#) (interp, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_spline2d_eval_deriv_yy](#) (interp, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_spline2d_eval_deriv_yy_e](#) (interp, x, y, xa, ya, z)
- real(fgsl_double) function [fgsl_spline2d_eval_deriv_xy](#) (interp, x, y, xa, ya)
- integer(fgsl_int) function [fgsl_spline2d_eval_deriv_xy_e](#) (interp, x, y, xa, ya, z)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_spline2d_name](#) (interp)
- integer(fgsl_int) function [fgsl_spline2d_set](#) (spline, za, i, j, z)
- real(fgsl_double) function [fgsl_spline2d_get](#) (spline, za, i, j)
- integer(fgsl_size_t) function [fgsl_spline2d_min_size](#) (interp)

49.29.1 Function/Subroutine Documentation

49.29.1.1 fgsl_interp2d_alloc()

```
type(fgsl_interp2d) function fgsl_interp2d_alloc (
    type(fgsl_interp2d_type), intent(in) T,
    integer(fgsl_size_t), intent(in) xsize,
    integer(fgsl_size_t), intent(in) ysize )
```

49.29.1.2 fgsl_interp2d_eval()

```
real(fgsl_double) function fgsl_interp2d_eval (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.3 fgsl_interp2d_eval_deriv_x()

```
real(fgsl_double) function fgsl_interp2d_eval_deriv_x (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.4 fgsl_interp2d_eval_deriv_x_e()

```
integer(fgsl_int) function fgsl_interp2d_eval_deriv_x_e (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )
```

49.29.1.5 fgsl_interp2d_eval_deriv_xx()

```

real(fgsl_double) function fgsl_interp2d_eval_deriv_xx (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )

```

49.29.1.6 fgsl_interp2d_eval_deriv_xx_e()

```

integer(fgsl_int) function fgsl_interp2d_eval_deriv_xx_e (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )

```

49.29.1.7 fgsl_interp2d_eval_deriv_xy()

```

real(fgsl_double) function fgsl_interp2d_eval_deriv_xy (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )

```

49.29.1.8 fgsl_interp2d_eval_deriv_xy_e()

```

integer(fgsl_int) function fgsl_interp2d_eval_deriv_xy_e (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )

```

49.29.1.9 fgsl_interp2d_eval_deriv_y()

```

real(fgsl_double) function fgsl_interp2d_eval_deriv_y (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )

```

49.29.1.10 fgsl_interp2d_eval_deriv_y_e()

```

integer(fgsl_int) function fgsl_interp2d_eval_deriv_y_e (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )

```

49.29.1.11 fgsl_interp2d_eval_deriv_yy()

```

real(fgsl_double) function fgsl_interp2d_eval_deriv_yy (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )

```

49.29.1.12 fgsl_interp2d_eval_deriv_yy_e()

```

integer(fgsl_int) function fgsl_interp2d_eval_deriv_yy_e (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )

```

49.29.1.13 fgsl_interp2d_eval_e()

```
integer(fgsl_int) function fgsl_interp2d_eval_e (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )
```

49.29.1.14 fgsl_interp2d_eval_e_extrap()

```
integer(fgsl_int) function fgsl_interp2d_eval_e_extrap (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )
```

49.29.1.15 fgsl_interp2d_eval_extrap()

```
real(fgsl_double) function fgsl_interp2d_eval_extrap (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.16 fgsl_interp2d_eval_extrap_e()

```
integer(fgsl_int) function fgsl_interp2d_eval_extrap_e (
    type(fgsl_interp2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xarr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yarr,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous zarr,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )
```

49.29.1.17 fgsl_interp2d_free()

```
subroutine fgsl_interp2d_free (  
    type(fgsl_interp2d), intent(in) interp )
```

49.29.1.18 fgsl_interp2d_init()

```
integer(fgsl_int) function fgsl_interp2d_init (  
    type(fgsl_interp2d), intent(in) interp,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,  
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous za )
```

49.29.1.19 fgsl_interp2d_min_size()

```
integer(fgsl_size_t) function fgsl_interp2d_min_size (  
    type(fgsl_interp2d), intent(in) interp )
```

49.29.1.20 fgsl_interp2d_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_interp2d_name (  
    type(fgsl_interp2d), intent(in) interp )
```

49.29.1.21 fgsl_interp2d_status()

```
logical function fgsl_interp2d_status (  
    type(fgsl_interp2d), intent(in) interp )
```

49.29.1.22 fgsl_interp2d_type_min_size()

```
integer(fgsl_size_t) function fgsl_interp2d_type_min_size (  
    type(fgsl_interp2d_type), intent(in) T )
```

49.29.1.23 fgsl_interp_accel_alloc()

```
type(fgsl_interp_accel) function fgsl_interp_accel_alloc
```

49.29.1.24 fgsl_interp_accel_find()

```
integer(fgsl_size_t) function fgsl_interp_accel_find (  
    type(fgsl_interp_accel), intent(inout) acc,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,  
    real(fgsl_double), intent(in) x )
```

49.29.1.25 fgsl_interp_accel_free()

```
subroutine fgsl_interp_accel_free (  
    type(fgsl_interp_accel), intent(inout) acc )
```

49.29.1.26 fgsl_interp_accel_status()

```
logical function fgsl_interp_accel_status (  
    type(fgsl_interp_accel), intent(in) acc )
```

49.29.1.27 fgsl_interp_alloc()

```
type(fgsl_interp) function fgsl_interp_alloc (  
    type(fgsl_interp_type), intent(in) interp_type,  
    integer(fgsl_size_t), intent(in) size )
```

49.29.1.28 fgsl_interp_bsearch()

```
integer(fgsl_size_t) function fgsl_interp_bsearch (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,  
    real(fgsl_double), intent(in) x,  
    integer(fgsl_size_t), intent(in) index_lo,  
    integer(fgsl_size_t), intent(in) index_hi )
```

49.29.1.29 fgsl_interp_eval()

```
real(fgsl_double) function fgsl_interp_eval (
    type(fgsl_interp), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,
    real(fgsl_double), intent(in) x,
    type(fgsl_interp_accel), intent(inout) acc )
```

49.29.1.30 fgsl_interp_eval_deriv()

```
real(fgsl_double) function fgsl_interp_eval_deriv (
    type(fgsl_interp), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,
    real(fgsl_double), intent(in) x,
    type(fgsl_interp_accel), intent(inout) acc )
```

49.29.1.31 fgsl_interp_eval_deriv2()

```
real(fgsl_double) function fgsl_interp_eval_deriv2 (
    type(fgsl_interp), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,
    real(fgsl_double), intent(in) x,
    type(fgsl_interp_accel), intent(inout) acc )
```

49.29.1.32 fgsl_interp_eval_deriv2_e()

```
integer(fgsl_int) function fgsl_interp_eval_deriv2_e (
    type(fgsl_interp), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,
    real(fgsl_double), intent(in) x,
    type(fgsl_interp_accel), intent(inout) acc,
    real(fgsl_double), intent(out) d2 )
```

49.29.1.33 fgsl_interp_eval_deriv_e()

```
integer(fgsl_int) function fgsl_interp_eval_deriv_e (
    type(fgsl_interp), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,
    real(fgsl_double), intent(in) x,
    type(fgsl_interp_accel), intent(inout) acc,
    real(fgsl_double), intent(out) d )
```


49.29.1.34 fgsl_interp_eval_e()

```
integer(fgsl_int) function fgsl_interp_eval_e (  
    type(fgsl_interp), intent(in) interp,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_interp_accel), intent(inout) acc,  
    real(fgsl_double), intent(out) y )
```

49.29.1.35 fgsl_interp_eval_integ()

```
real(fgsl_double) function fgsl_interp_eval_integ (  
    type(fgsl_interp), intent(in) interp,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    type(fgsl_interp_accel), intent(inout) acc )
```

49.29.1.36 fgsl_interp_eval_integ_e()

```
integer(fgsl_int) function fgsl_interp_eval_integ_e (  
    type(fgsl_interp), intent(in) interp,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    type(fgsl_interp_accel), intent(inout) acc,  
    real(fgsl_double), intent(out) result )
```

49.29.1.37 fgsl_interp_free()

```
subroutine fgsl_interp_free (  
    type(fgsl_interp), intent(inout) interp )
```

49.29.1.38 fgsl_interp_init()

```
integer(fgsl_int) function fgsl_interp_init (  
    type(fgsl_interp), intent(inout) interp,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya )
```

49.29.1.39 fgsl_interp_min_size()

```
integer(fgsl_long) function fgsl_interp_min_size (  
    type(fgsl_interp), intent(in) interp )
```

49.29.1.40 fgsl_interp_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_interp_name (  
    type(fgsl_interp), intent(in) interp )
```

49.29.1.41 fgsl_interp_status()

```
logical function fgsl_interp_status (  
    type(fgsl_interp), intent(in) interp )
```

49.29.1.42 fgsl_interp_type_min_size()

```
integer(fgsl_long) function fgsl_interp_type_min_size (  
    type(fgsl_interp_type), intent(in) interp )
```

49.29.1.43 fgsl_sizeof_interp()

```
integer(fgsl_size_t) function fgsl_sizeof_interp (  
    type(fgsl_interp), intent(in) w )
```

49.29.1.44 fgsl_spline2d_alloc()

```
type(fgsl_spline2d) function fgsl_spline2d_alloc (  
    type(fgsl_interp2d_type), intent(in) T,  
    integer(fgsl_size_t), intent(in) xsize,  
    integer(fgsl_size_t), intent(in) ysize )
```

49.29.1.45 fgsl_spline2d_eval()

```
real(fgsl_double) function fgsl_spline2d_eval (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.46 fgsl_spline2d_eval_deriv_x()

```
real(fgsl_double) function fgsl_spline2d_eval_deriv_x (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.47 fgsl_spline2d_eval_deriv_x_e()

```
integer(fgsl_int) function fgsl_spline2d_eval_deriv_x_e (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )
```

49.29.1.48 fgsl_spline2d_eval_deriv_xx()

```
real(fgsl_double) function fgsl_spline2d_eval_deriv_xx (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.49 fgsl_spline2d_eval_deriv_xx_e()

```
integer(fgsl_int) function fgsl_spline2d_eval_deriv_xx_e (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )
```

49.29.1.50 fgsl_spline2d_eval_deriv_xy()

```
real(fgsl_double) function fgsl_spline2d_eval_deriv_xy (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.51 fgsl_spline2d_eval_deriv_xy_e()

```
integer(fgsl_int) function fgsl_spline2d_eval_deriv_xy_e (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )
```

49.29.1.52 fgsl_spline2d_eval_deriv_y()

```
real(fgsl_double) function fgsl_spline2d_eval_deriv_y (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.53 fgsl_spline2d_eval_deriv_y_e()

```
integer(fgsl_int) function fgsl_spline2d_eval_deriv_y_e (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya,
    real(fgsl_double), intent(out) z )
```

49.29.1.54 fgsl_spline2d_eval_deriv_yy()

```
real(fgsl_double) function fgsl_spline2d_eval_deriv_yy (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    type(fgsl_interp_accel), intent(inout) xa,
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.55 fgsl_spline2d_eval_deriv_yy_e()

```
integer(fgsl_int) function fgsl_spline2d_eval_deriv_yy_e (  
    type(fgsl_spline2d), intent(in) interp,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_interp_accel), intent(inout) xa,  
    type(fgsl_interp_accel), intent(inout) ya,  
    real(fgsl_double), intent(out) z )
```

49.29.1.56 fgsl_spline2d_eval_e()

```
integer(fgsl_int) function fgsl_spline2d_eval_e (  
    type(fgsl_spline2d), intent(in) interp,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_interp_accel), intent(inout) xa,  
    type(fgsl_interp_accel), intent(inout) ya,  
    real(fgsl_double), intent(out) z )
```

49.29.1.57 fgsl_spline2d_eval_extrap()

```
real(fgsl_double) function fgsl_spline2d_eval_extrap (  
    type(fgsl_spline2d), intent(in) interp,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_interp_accel), intent(inout) xa,  
    type(fgsl_interp_accel), intent(inout) ya )
```

49.29.1.58 fgsl_spline2d_eval_extrap_e()

```
integer(fgsl_int) function fgsl_spline2d_eval_extrap_e (  
    type(fgsl_spline2d), intent(in) interp,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_interp_accel), intent(inout) xa,  
    type(fgsl_interp_accel), intent(inout) ya,  
    real(fgsl_double), intent(out) z )
```

49.29.1.59 fgsl_spline2d_free()

```
subroutine fgsl_spline2d_free (  
    type(fgsl_spline2d), intent(in) interp )
```

49.29.1.60 fgsl_spline2d_get()

```
real(fgsl_double) function fgsl_spline2d_get (
    type(fgsl_spline2d), intent(in) spline,
    real(fgsl_double), dimension(*), intent(in) za,
    integer(fgsl_size_t), intent(in) i,
    integer(fgsl_size_t), intent(in) j )
```

49.29.1.61 fgsl_spline2d_init()

```
integer(fgsl_int) function fgsl_spline2d_init (
    type(fgsl_spline2d), intent(in) interp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,
    real(fgsl_double), dimension(:,:), intent(in), target, contiguous za )
```

49.29.1.62 fgsl_spline2d_min_size()

```
integer(fgsl_size_t) function fgsl_spline2d_min_size (
    type(fgsl_spline2d), intent(in) interp )
```

49.29.1.63 fgsl_spline2d_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_spline2d_name (
    type(fgsl_spline2d), intent(in) interp )
```

49.29.1.64 fgsl_spline2d_set()

```
integer(fgsl_int) function fgsl_spline2d_set (
    type(fgsl_spline2d), intent(in) spline,
    real(fgsl_double), dimension(*), intent(inout) za,
    integer(fgsl_size_t), intent(in) i,
    integer(fgsl_size_t), intent(in) j,
    real(fgsl_double), intent(in) z )
```

49.29.1.65 fgsl_spline2d_status()

```
logical function fgsl_spline2d_status (
    type(fgsl_spline2d), intent(in) spline )
```

49.29.1.66 fgsl_spline_alloc()

```
type(fgsl_spline) function fgsl_spline_alloc (
    type(fgsl_interp_type), intent(in) interp_type,
    integer(fgsl_size_t), intent(in) size )
```

49.29.1.67 fgsl_spline_eval()

```
real(fgsl_double) function fgsl_spline_eval (
    type(fgsl_spline), intent(in) spline,
    real(fgsl_double), intent(in) x,
    type(fgsl_interp_accel), intent(inout) acc )
```

49.29.1.68 fgsl_spline_eval_deriv()

```
real(fgsl_double) function fgsl_spline_eval_deriv (
    type(fgsl_spline), intent(in) spline,
    real(fgsl_double), intent(in) x,
    type(fgsl_interp_accel), intent(inout) acc )
```

49.29.1.69 fgsl_spline_eval_deriv2()

```
real(fgsl_double) function fgsl_spline_eval_deriv2 (
    type(fgsl_spline), intent(in) spline,
    real(fgsl_double), intent(in) x,
    type(fgsl_interp_accel), intent(inout) acc )
```

49.29.1.70 fgsl_spline_eval_deriv2_e()

```
integer(fgsl_int) function fgsl_spline_eval_deriv2_e (
    type(fgsl_spline), intent(in) spline,
    real(fgsl_double), intent(in) x,
    type(fgsl_interp_accel), intent(inout) acc,
    real(fgsl_double), intent(out) y )
```

49.29.1.71 fgsl_spline_eval_deriv_e()

```
integer(fgsl_int) function fgsl_spline_eval_deriv_e (  
    type(fgsl_spline), intent(in) spline,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_interp_accel), intent(inout) acc,  
    real(fgsl_double), intent(out) y )
```

49.29.1.72 fgsl_spline_eval_e()

```
integer(fgsl_int) function fgsl_spline_eval_e (  
    type(fgsl_spline), intent(in) spline,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_interp_accel), intent(inout) acc,  
    real(fgsl_double), intent(out) y )
```

49.29.1.73 fgsl_spline_eval_integ()

```
real(fgsl_double) function fgsl_spline_eval_integ (  
    type(fgsl_spline), intent(in) spline,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    type(fgsl_interp_accel), intent(inout) acc )
```

49.29.1.74 fgsl_spline_eval_integ_e()

```
integer(fgsl_int) function fgsl_spline_eval_integ_e (  
    type(fgsl_spline), intent(in) spline,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    type(fgsl_interp_accel), intent(inout) acc,  
    real(fgsl_double), intent(out) y )
```

49.29.1.75 fgsl_spline_free()

```
subroutine fgsl_spline_free (  
    type(fgsl_spline), intent(inout) spline )
```


49.29.1.76 fgsl_spline_init()

```
integer(fgsl_int) function fgsl_spline_init (
    type(fgsl_spline), intent(inout) spline,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya )
```

49.29.1.77 fgsl_spline_min_size()

```
integer(fgsl_long) function fgsl_spline_min_size (
    type(fgsl_spline), intent(in) spline )
```

49.29.1.78 fgsl_spline_name()

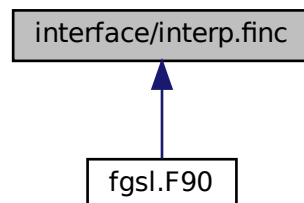
```
character(len=fgsl_strmax) function fgsl_spline_name (
    type(fgsl_spline), intent(in) spline )
```

49.29.1.79 fgsl_spline_status()

```
logical function fgsl_spline_status (
    type(fgsl_spline), intent(in) spline )
```

49.30 interface/interp.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- real(c_double) function [gsl_interp_eval](#) (interp, xa, ya, x, acc)
- integer(c_int) function [gsl_interp_eval_e](#) (interp, xa, ya, x, acc, y)
- real(c_double) function [gsl_interp_eval_integ](#) (interp, xa, ya, a, b, acc)
- integer(c_int) function [gsl_interp_eval_integ_e](#) (interp, xa, ya, a, b, acc, result)
- real(c_double) function [gsl_interp_eval_deriv](#) (interp, xa, ya, x, acc)
- integer(c_int) function [gsl_interp_eval_deriv_e](#) (interp, xa, ya, x, acc, y)
- real(c_double) function [gsl_interp_eval_deriv2](#) (interp, xa, ya, x, acc)
- integer(c_int) function [gsl_interp_eval_deriv2_e](#) (interp, xa, ya, x, acc, y)
- type(c_ptr) function [fgsl_aux_interp_alloc](#) (int_interp)
- type(c_ptr) function [gsl_interp_alloc](#) (interp_type, size)
- subroutine [gsl_interp_free](#) (interp)
- integer(c_int) function [gsl_interp_init](#) (interp, xa, ya, size)
- type(c_ptr) function [gsl_interp_accel_alloc](#) ()
- subroutine [gsl_interp_accel_free](#) (acc)
- type(c_ptr) function [gsl_interp_name](#) (interp)
- integer(c_int) function [gsl_interp_min_size](#) (interp)
- integer(c_int) function [gsl_interp_type_min_size](#) (interp)
- integer(c_size_t) function [gsl_interp_bsearch](#) (xa, x, index_lo, index_hi)
- integer(c_size_t) function [gsl_interp_accel_find](#) (acc, xa, size, x)
- type(c_ptr) function [gsl_spline_alloc](#) (interp_type, size)
- integer(c_int) function [gsl_spline_init](#) (spline, xa, ya, size)
- type(c_ptr) function [gsl_spline_name](#) (spline)
- integer(c_int) function [gsl_spline_min_size](#) (spline)
- real(c_double) function [gsl_spline_eval](#) (spline, x, acc)
- integer(c_int) function [gsl_spline_eval_e](#) (spline, x, acc, y)
- real(c_double) function [gsl_spline_eval_deriv](#) (spline, x, acc)
- integer(c_int) function [gsl_spline_eval_deriv_e](#) (spline, x, acc, y)
- real(c_double) function [gsl_spline_eval_deriv2](#) (spline, x, acc)
- integer(c_int) function [gsl_spline_eval_deriv2_e](#) (spline, x, acc, y)
- real(c_double) function [gsl_spline_eval_integ](#) (spline, a, b, acc)
- integer(c_int) function [gsl_spline_eval_integ_e](#) (spline, a, b, acc, y)
- subroutine [gsl_spline_free](#) (spline)
- integer(c_size_t) function [gsl_aux_sizeof_interp](#) ()
- type(c_ptr) function [fgsl_aux_interp2d_alloc](#) (i)
- type(c_ptr) function [gsl_interp2d_alloc](#) (T, xsize, ysize)
- type(c_ptr) function [gsl_interp2d_name](#) (interp)
- integer(c_size_t) function [gsl_interp2d_min_size](#) (interp)
- integer(c_size_t) function [gsl_interp2d_type_min_size](#) (T)
- integer(c_int) function [gsl_interp2d_init](#) (interp, xa, ya, za, xsize, ysize)
- subroutine [gsl_interp2d_free](#) (interp)
- real(c_double) function [gsl_interp2d_eval](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- real(c_double) function [gsl_interp2d_eval_extrap](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(c_int) function [gsl_interp2d_eval_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- integer(c_int) function [gsl_interp2d_eval_e_extrap](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- integer(c_int) function [gsl_interp2d_eval_extrap_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- real(c_double) function [gsl_interp2d_eval_deriv_x](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(c_int) function [gsl_interp2d_eval_deriv_x_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- real(c_double) function [gsl_interp2d_eval_deriv_y](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(c_int) function [gsl_interp2d_eval_deriv_y_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- real(c_double) function [gsl_interp2d_eval_deriv_xx](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(c_int) function [gsl_interp2d_eval_deriv_xx_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- real(c_double) function [gsl_interp2d_eval_deriv_yy](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(c_int) function [gsl_interp2d_eval_deriv_yy_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)

- real(c_double) function [gsl_interp2d_eval_deriv_xy](#) (interp, xarr, yarr, zarr, x, y, xa, ya)
- integer(c_int) function [gsl_interp2d_eval_deriv_xy_e](#) (interp, xarr, yarr, zarr, x, y, xa, ya, z)
- type(c_ptr) function [gsl_spline2d_alloc](#) (T, xsize, ysize)
- integer(c_int) function [gsl_spline2d_init](#) (interp, xa, ya, za, xsize, ysize)
- subroutine [gsl_spline2d_free](#) (interp)
- real(c_double) function [gsl_spline2d_eval](#) (interp, x, y, xa, ya)
- integer(c_int) function [gsl_spline2d_eval_e](#) (interp, x, y, xa, ya, z)
- real(c_double) function [gsl_spline2d_eval_extrap](#) (interp, x, y, xa, ya)
- integer(c_int) function [gsl_spline2d_eval_extrap_e](#) (interp, x, y, xa, ya, z)
- real(c_double) function [gsl_spline2d_eval_deriv_x](#) (interp, x, y, xa, ya)
- integer(c_int) function [gsl_spline2d_eval_deriv_x_e](#) (interp, x, y, xa, ya, z)
- real(c_double) function [gsl_spline2d_eval_deriv_y](#) (interp, x, y, xa, ya)
- integer(c_int) function [gsl_spline2d_eval_deriv_y_e](#) (interp, x, y, xa, ya, z)
- real(c_double) function [gsl_spline2d_eval_deriv_xx](#) (interp, x, y, xa, ya)
- integer(c_int) function [gsl_spline2d_eval_deriv_xx_e](#) (interp, x, y, xa, ya, z)
- real(c_double) function [gsl_spline2d_eval_deriv_yy](#) (interp, x, y, xa, ya)
- integer(c_int) function [gsl_spline2d_eval_deriv_yy_e](#) (interp, x, y, xa, ya, z)
- real(c_double) function [gsl_spline2d_eval_deriv_xy](#) (interp, x, y, xa, ya)
- integer(c_int) function [gsl_spline2d_eval_deriv_xy_e](#) (interp, x, y, xa, ya, z)
- integer(c_size_t) function [gsl_spline2d_min_size](#) (interp)
- type(c_ptr) function [gsl_spline2d_name](#) (interp)
- integer(c_int) function [gsl_spline2d_set](#) (interp, zarr, i, j, z)
- real(c_double) function [gsl_spline2d_get](#) (interp, zarr, i, j)

49.30.1 Function/Subroutine Documentation

49.30.1.1 fgsl_aux_interp2d_alloc()

```
type(c_ptr) function fgsl_aux_interp2d_alloc (
    integer(c_int), value i )
```

49.30.1.2 fgsl_aux_interp_alloc()

```
type(c_ptr) function fgsl_aux_interp_alloc (
    integer(fgsl_int), value int_interp )
```

49.30.1.3 gsl_aux_sizeof_interp()

```
integer(c_size_t) function gsl_aux_sizeof_interp
```

49.30.1.4 `gsl_interp2d_alloc()`

```
type(c_ptr) function gsl_interp2d_alloc (
    type(c_ptr), value T,
    integer(c_size_t), value xsize,
    integer(c_size_t), value ysize )
```

49.30.1.5 `gsl_interp2d_eval()`

```
real(c_double) function gsl_interp2d_eval (
    type(c_ptr), value interp,
    type(c_ptr), value xarr,
    type(c_ptr), value yarr,
    type(c_ptr), value zarr,
    real(c_double), value x,
    real(c_double), value y,
    type(c_ptr), value xa,
    type(c_ptr), value ya )
```

49.30.1.6 `gsl_interp2d_eval_deriv_x()`

```
real(c_double) function gsl_interp2d_eval_deriv_x (
    type(c_ptr), value interp,
    type(c_ptr), value xarr,
    type(c_ptr), value yarr,
    type(c_ptr), value zarr,
    real(c_double), value x,
    real(c_double), value y,
    type(c_ptr), value xa,
    type(c_ptr), value ya )
```

49.30.1.7 `gsl_interp2d_eval_deriv_x_e()`

```
integer(c_int) function gsl_interp2d_eval_deriv_x_e (
    type(c_ptr), value interp,
    type(c_ptr), value xarr,
    type(c_ptr), value yarr,
    type(c_ptr), value zarr,
    real(c_double), value x,
    real(c_double), value y,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double) z )
```

49.30.1.8 gsl_interp2d_eval_deriv_xx()

```
real(c_double) function gsl_interp2d_eval_deriv_xx (
    type(c_ptr), value interp,
    type(c_ptr), value xarr,
    type(c_ptr), value yarr,
    type(c_ptr), value zarr,
    real(c_double), value x,
    real(c_double), value y,
    type(c_ptr), value xa,
    type(c_ptr), value ya )
```

49.30.1.9 gsl_interp2d_eval_deriv_xx_e()

```
integer(c_int) function gsl_interp2d_eval_deriv_xx_e (
    type(c_ptr), value interp,
    type(c_ptr), value xarr,
    type(c_ptr), value yarr,
    type(c_ptr), value zarr,
    real(c_double), value x,
    real(c_double), value y,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double) z )
```

49.30.1.10 gsl_interp2d_eval_deriv_xy()

```
real(c_double) function gsl_interp2d_eval_deriv_xy (
    type(c_ptr), value interp,
    type(c_ptr), value xarr,
    type(c_ptr), value yarr,
    type(c_ptr), value zarr,
    real(c_double), value x,
    real(c_double), value y,
    type(c_ptr), value xa,
    type(c_ptr), value ya )
```

49.30.1.11 gsl_interp2d_eval_deriv_xy_e()

```
integer(c_int) function gsl_interp2d_eval_deriv_xy_e (
    type(c_ptr), value interp,
    type(c_ptr), value xarr,
    type(c_ptr), value yarr,
    type(c_ptr), value zarr,
    real(c_double), value x,
    real(c_double), value y,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double) z )
```

49.30.1.12 gsl_interp2d_eval_deriv_y()

```
real(c_double) function gsl_interp2d_eval_deriv_y (  
    type(c_ptr), value interp,  
    type(c_ptr), value xarr,  
    type(c_ptr), value yarr,  
    type(c_ptr), value zarr,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.13 gsl_interp2d_eval_deriv_y_e()

```
integer(c_int) function gsl_interp2d_eval_deriv_y_e (  
    type(c_ptr), value interp,  
    type(c_ptr), value xarr,  
    type(c_ptr), value yarr,  
    type(c_ptr), value zarr,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.14 gsl_interp2d_eval_deriv_yy()

```
real(c_double) function gsl_interp2d_eval_deriv_yy (  
    type(c_ptr), value interp,  
    type(c_ptr), value xarr,  
    type(c_ptr), value yarr,  
    type(c_ptr), value zarr,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.15 gsl_interp2d_eval_deriv_yy_e()

```
integer(c_int) function gsl_interp2d_eval_deriv_yy_e (  
    type(c_ptr), value interp,  
    type(c_ptr), value xarr,  
    type(c_ptr), value yarr,  
    type(c_ptr), value zarr,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.16 gsl_interp2d_eval_e()

```
integer(c_int) function gsl_interp2d_eval_e (  
    type(c_ptr), value interp,  
    type(c_ptr), value xarr,  
    type(c_ptr), value yarr,  
    type(c_ptr), value zarr,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.17 gsl_interp2d_eval_e_extrap()

```
integer(c_int) function gsl_interp2d_eval_e_extrap (  
    type(c_ptr), value interp,  
    type(c_ptr), value xarr,  
    type(c_ptr), value yarr,  
    type(c_ptr), value zarr,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.18 gsl_interp2d_eval_extrap()

```
real(c_double) function gsl_interp2d_eval_extrap (  
    type(c_ptr), value interp,  
    type(c_ptr), value xarr,  
    type(c_ptr), value yarr,  
    type(c_ptr), value zarr,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.19 gsl_interp2d_eval_extrap_e()

```
integer(c_int) function gsl_interp2d_eval_extrap_e (  
    type(c_ptr), value interp,  
    type(c_ptr), value xarr,  
    type(c_ptr), value yarr,  
    type(c_ptr), value zarr,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.20 gsl_interp2d_free()

```
subroutine gsl_interp2d_free (  
    type(c_ptr), value interp )
```

49.30.1.21 gsl_interp2d_init()

```
integer(c_int) function gsl_interp2d_init (  
    type(c_ptr), value interp,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    type(c_ptr), value za,  
    integer(c_size_t), value xsize,  
    integer(c_size_t), value ysize )
```

49.30.1.22 gsl_interp2d_min_size()

```
integer(c_size_t) function gsl_interp2d_min_size (  
    type(c_ptr), value interp )
```

49.30.1.23 gsl_interp2d_name()

```
type(c_ptr) function gsl_interp2d_name (  
    type(c_ptr), value interp )
```

49.30.1.24 gsl_interp2d_type_min_size()

```
integer(c_size_t) function gsl_interp2d_type_min_size (  
    type(c_ptr), value T )
```

49.30.1.25 gsl_interp_accel_alloc()

```
type(c_ptr) function gsl_interp_accel_alloc
```


49.30.1.26 gsl_interp_accel_find()

```
integer(c_size_t) function gsl_interp_accel_find (  
    type(c_ptr), value acc,  
    type(c_ptr), value xa,  
    integer(c_size_t), value size,  
    real(c_double), value x )
```

49.30.1.27 gsl_interp_accel_free()

```
subroutine gsl_interp_accel_free (  
    type(c_ptr), value acc )
```

49.30.1.28 gsl_interp_alloc()

```
type(c_ptr) function gsl_interp_alloc (  
    type(c_ptr), value interp_type,  
    integer(c_size_t), value size )
```

49.30.1.29 gsl_interp_bsearch()

```
integer(c_size_t) function gsl_interp_bsearch (  
    type(c_ptr), value xa,  
    real(c_double), value x,  
    integer(c_size_t), value index_lo,  
    integer(c_size_t), value index_hi )
```

49.30.1.30 gsl_interp_eval()

```
real(c_double) function gsl_interp_eval (  
    type(c_ptr), value interp,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double), value x,  
    type(c_ptr), value acc )
```

49.30.1.31 gsl_interp_eval_deriv()

```
real(c_double) function gsl_interp_eval_deriv (
    type(c_ptr), value interp,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double), value x,
    type(c_ptr), value acc )
```

49.30.1.32 gsl_interp_eval_deriv2()

```
real(c_double) function gsl_interp_eval_deriv2 (
    type(c_ptr), value interp,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double), value x,
    type(c_ptr), value acc )
```

49.30.1.33 gsl_interp_eval_deriv2_e()

```
integer(c_int) function gsl_interp_eval_deriv2_e (
    type(c_ptr), value interp,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double), value x,
    type(c_ptr), value acc,
    real(c_double), intent(out) y )
```

49.30.1.34 gsl_interp_eval_deriv_e()

```
integer(c_int) function gsl_interp_eval_deriv_e (
    type(c_ptr), value interp,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double), value x,
    type(c_ptr), value acc,
    real(c_double), intent(out) y )
```

49.30.1.35 gsl_interp_eval_e()

```
integer(c_int) function gsl_interp_eval_e (
    type(c_ptr), value interp,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double), value x,
    type(c_ptr), value acc,
    real(c_double) y )
```

49.30.1.36 gsl_interp_eval_integ()

```
real(c_double) function gsl_interp_eval_integ (
    type(c_ptr), value interp,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double), value a,
    real(c_double), value b,
    type(c_ptr), value acc )
```

49.30.1.37 gsl_interp_eval_integ_e()

```
integer(c_int) function gsl_interp_eval_integ_e (
    type(c_ptr), value interp,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    real(c_double), value a,
    real(c_double), value b,
    type(c_ptr), value acc,
    real(c_double), intent(out) result )
```

49.30.1.38 gsl_interp_free()

```
subroutine gsl_interp_free (
    type(c_ptr), value interp )
```

49.30.1.39 gsl_interp_init()

```
integer(c_int) function gsl_interp_init (
    type(c_ptr), value interp,
    type(c_ptr), value xa,
    type(c_ptr), value ya,
    integer(c_size_t), value size )
```

49.30.1.40 gsl_interp_min_size()

```
integer(c_int) function gsl_interp_min_size (
    type(c_ptr), value interp )
```

49.30.1.41 gsl_interp_name()

```
type(c_ptr) function gsl_interp_name (  
    type(c_ptr), value interp )
```

49.30.1.42 gsl_interp_type_min_size()

```
integer(c_int) function gsl_interp_type_min_size (  
    type(c_ptr), value interp )
```

49.30.1.43 gsl_spline2d_alloc()

```
type(c_ptr) function gsl_spline2d_alloc (  
    type(c_ptr), value T,  
    integer(c_size_t), value xsize,  
    integer(c_size_t), value ysize )
```

49.30.1.44 gsl_spline2d_eval()

```
real(c_double) function gsl_spline2d_eval (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.45 gsl_spline2d_eval_deriv_x()

```
real(c_double) function gsl_spline2d_eval_deriv_x (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.46 gsl_spline2d_eval_deriv_x_e()

```
integer(c_int) function gsl_spline2d_eval_deriv_x_e (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.47 gsl_spline2d_eval_deriv_xx()

```
real(c_double) function gsl_spline2d_eval_deriv_xx (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.48 gsl_spline2d_eval_deriv_xx_e()

```
integer(c_int) function gsl_spline2d_eval_deriv_xx_e (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.49 gsl_spline2d_eval_deriv_xy()

```
real(c_double) function gsl_spline2d_eval_deriv_xy (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.50 gsl_spline2d_eval_deriv_xy_e()

```
integer(c_int) function gsl_spline2d_eval_deriv_xy_e (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.51 gsl_spline2d_eval_deriv_y()

```
real(c_double) function gsl_spline2d_eval_deriv_y (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.52 gsl_spline2d_eval_deriv_y_e()

```
integer(c_int) function gsl_spline2d_eval_deriv_y_e (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.53 gsl_spline2d_eval_deriv_yy()

```
real(c_double) function gsl_spline2d_eval_deriv_yy (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.54 gsl_spline2d_eval_deriv_yy_e()

```
integer(c_int) function gsl_spline2d_eval_deriv_yy_e (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.55 gsl_spline2d_eval_e()

```
integer(c_int) function gsl_spline2d_eval_e (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.56 gsl_spline2d_eval_extrap()

```
real(c_double) function gsl_spline2d_eval_extrap (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya )
```

49.30.1.57 gsl_spline2d_eval_extrap_e()

```
integer(c_int) function gsl_spline2d_eval_extrap_e (  
    type(c_ptr), value interp,  
    real(c_double), value x,  
    real(c_double), value y,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    real(c_double) z )
```

49.30.1.58 gsl_spline2d_free()

```
subroutine gsl_spline2d_free (  
    type(c_ptr), value interp )
```

49.30.1.59 gsl_spline2d_get()

```
real(c_double) function gsl_spline2d_get (  
    type(c_ptr), value interp,  
    real(c_double), dimension(*) zarr,  
    integer(c_size_t), value i,  
    integer(c_size_t), value j )
```

49.30.1.60 gsl_spline2d_init()

```
integer(c_int) function gsl_spline2d_init (  
    type(c_ptr), value interp,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    type(c_ptr), value za,  
    integer(c_size_t), value xsize,  
    integer(c_size_t), value ysize )
```

49.30.1.61 gsl_spline2d_min_size()

```
integer(c_size_t) function gsl_spline2d_min_size (  
    type(c_ptr), value interp )
```

49.30.1.62 gsl_spline2d_name()

```
type(c_ptr) function gsl_spline2d_name (  
    type(c_ptr), value interp )
```

49.30.1.63 gsl_spline2d_set()

```
integer(c_int) function gsl_spline2d_set (  
    type(c_ptr), value interp,  
    real(c_double), dimension(*) zarr,  
    integer(c_size_t), value i,  
    integer(c_size_t), value j,  
    real(c_double), value z )
```

49.30.1.64 gsl_spline_alloc()

```
type(c_ptr) function gsl_spline_alloc (  
    type(c_ptr), value interp_type,  
    integer(c_size_t), value size )
```

49.30.1.65 gsl_spline_eval()

```
real(c_double) function gsl_spline_eval (  
    type(c_ptr), value spline,  
    real(c_double), value x,  
    type(c_ptr), value acc )
```

49.30.1.66 gsl_spline_eval_deriv()

```
real(c_double) function gsl_spline_eval_deriv (  
    type(c_ptr), value spline,  
    real(c_double), value x,  
    type(c_ptr), value acc )
```


49.30.1.67 gsl_spline_eval_deriv2()

```
real(c_double) function gsl_spline_eval_deriv2 (
    type(c_ptr), value spline,
    real(c_double), value x,
    type(c_ptr), value acc )
```

49.30.1.68 gsl_spline_eval_deriv2_e()

```
integer(c_int) function gsl_spline_eval_deriv2_e (
    type(c_ptr), value spline,
    real(c_double), value x,
    type(c_ptr), value acc,
    real(c_double), intent(out) y )
```

49.30.1.69 gsl_spline_eval_deriv_e()

```
integer(c_int) function gsl_spline_eval_deriv_e (
    type(c_ptr), value spline,
    real(c_double), value x,
    type(c_ptr), value acc,
    real(c_double), intent(out) y )
```

49.30.1.70 gsl_spline_eval_e()

```
integer(c_int) function gsl_spline_eval_e (
    type(c_ptr), value spline,
    real(c_double), value x,
    type(c_ptr), value acc,
    real(c_double), intent(out) y )
```

49.30.1.71 gsl_spline_eval_integ()

```
real(c_double) function gsl_spline_eval_integ (
    type(c_ptr), value spline,
    real(c_double), value a,
    real(c_double), value b,
    type(c_ptr), value acc )
```

49.30.1.72 gsl_spline_eval_integ_e()

```
integer(c_int) function gsl_spline_eval_integ_e (  
    type(c_ptr), value spline,  
    real(c_double), value a,  
    real(c_double), value b,  
    type(c_ptr), value acc,  
    real(c_double), intent(out) y )
```

49.30.1.73 gsl_spline_free()

```
subroutine gsl_spline_free (  
    type(c_ptr), value spline )
```

49.30.1.74 gsl_spline_init()

```
integer(c_int) function gsl_spline_init (  
    type(c_ptr), value spline,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    integer(c_size_t), value size )
```

49.30.1.75 gsl_spline_min_size()

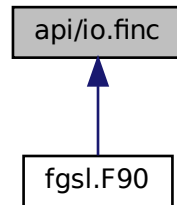
```
integer(c_int) function gsl_spline_min_size (  
    type(c_ptr), value spline )
```

49.30.1.76 gsl_spline_name()

```
type(c_ptr) function gsl_spline_name (  
    type(c_ptr), value spline )
```

49.31 api/io.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(fgsI_file) function [fgsI_open](#) (path, mode)
fgsI_open maps the POSIX call [fopen\(\)](#) to Fortran
- integer(fgsI_int) function [fgsI_close](#) (fd)
fgsI_close maps the POSIX call [fclose\(\)](#) to Fortran
- type(fgsI_file) function [fgsI_stdin](#) ()
fgsI_stdin produces a fgsI_file object corresponding to C standard input
- type(fgsI_file) function [fgsI_stdout](#) ()
fgsI_stdout produces a fgsI_file object corresponding to C standard output
- type(fgsI_file) function [fgsI_stderr](#) ()
fgsI_stderr produces a fgsI_file object corresponding to C standard error
- integer(fgsI_int) function [fgsI_flush](#) (file)
fgsI_flush flushes a fgsI_file object
- logical function [fgsI_file_status](#) (file)

49.31.1 Function/Subroutine Documentation

49.31.1.1 fgsI_close()

```
integer(fgsI_int) function fgsI_close (
    type(fgsI_file), intent(inout) fd )
```

fgsI_close maps the POSIX call [fclose\(\)](#) to Fortran

Parameters

<i>fd</i>	- on entry: open file object
-----------	------------------------------

Returns

Status.

49.31.1.2 fgsl_file_status()

```
logical function fgsl_file_status (  
    type(fgsl_file), intent(in) file )
```

49.31.1.3 fgsl_flush()

```
integer(fgsl_int) function fgsl_flush (  
    type(fgsl_file), intent(in) file )
```

fgsl_flush flushes a fgsl_file object

49.31.1.4 fgsl_open()

```
type(fgsl_file) function fgsl_open (  
    character(kind=fgsl_char, len=*), intent(in) path,  
    character(kind=fgsl_char, len=*), intent(in) mode )
```

fgsl_open maps the POSIX call [fopen\(\)](#) to Fortran

Parameters

<i>path</i>	- string specifying the path name of the file to be opened
<i>mode</i>	- string containing the opening mode

Returns

object of type fgsl_file which can be used in other I/O calls.

49.31.1.5 fgsl_stderr()

```
type(fgsl_file) function fgsl_stderr
```

fgsl_stderr produces a fgsl_file object corresponding to C standard error

49.31.1.6 fgsl_stdin()

```
type(fgsl_file) function fgsl_stdin
```

fgsl_stdin produces a fgsl_file object corresponding to C standard input

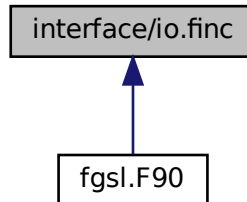
49.31.1.7 fgsl_stdout()

```
type(fgsl_file) function fgsl_stdout
```

fgsl_stdout produces a fgsl_file object corresponding to C standard output

49.32 interface/io.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [fopen](#) (path, mode)
- integer(c_int) function [fclose](#) (fd)
- type(c_ptr) function [fgsl_cstdin](#) ()
- type(c_ptr) function [fgsl_cstdout](#) ()
- type(c_ptr) function [fgsl_cstderr](#) ()
- integer(c_int) function [fflush](#) (stream)

49.32.1 Function/Subroutine Documentation

49.32.1.1 fclose()

```
integer(c_int) function fclose (  
    type(c_ptr), value fd )
```

49.32.1.2 fflush()

```
integer(c_int) function fflush (  
    type(c_ptr), value stream )
```

49.32.1.3 fgsl_cstderr()

```
type(c_ptr) function fgsl_cstderr
```

49.32.1.4 fgsl_cstdin()

```
type(c_ptr) function fgsl_cstdin
```

49.32.1.5 fgsl_cstdout()

```
type(c_ptr) function fgsl_cstdout
```

49.32.1.6 fopen()

```
type(c_ptr) function fopen (  
    type(c_ptr), value path,  
    type(c_ptr), value mode )
```

49.33 api/linalg.finc File Reference

Functions/Subroutines

- integer(fgsl_int) function [fgsl_linalg_lu_decomp](#) (a, p, signum)
- integer(fgsl_int) function [fgsl_linalg_complex_lu_decomp](#) (a, p, signum)
- integer(fgsl_int) function [fgsl_linalg_lu_solve](#) (lu, p, b, x)
- integer(fgsl_int) function [fgsl_linalg_complex_lu_solve](#) (lu, p, b, x)
- integer(fgsl_int) function [fgsl_linalg_lu_svx](#) (lu, p, x)
- integer(fgsl_int) function [fgsl_linalg_complex_lu_svx](#) (lu, p, x)
- integer(fgsl_int) function [fgsl_linalg_lu_refine](#) (a, lu, p, b, x, residual)
- integer(fgsl_int) function [fgsl_linalg_complex_lu_refine](#) (a, lu, p, b, x, residual)
- integer(fgsl_int) function [fgsl_linalg_lu_invert](#) (lu, p, inverse)
- integer(fgsl_int) function [fgsl_linalg_complex_lu_invert](#) (lu, p, inverse)
- integer(fgsl_int) function [fgsl_linalg_lu_invx](#) (lu, p)
- integer(fgsl_int) function [fgsl_linalg_complex_lu_invx](#) (lu, p)
- real(fgsl_double) function [fgsl_linalg_lu_det](#) (lu, signum)
- complex(fgsl_double_complex) function [fgsl_linalg_complex_lu_det](#) (lu, signum)
- real(fgsl_double) function [fgsl_linalg_lu_lndet](#) (lu)
- real(fgsl_double) function [fgsl_linalg_complex_lu_lndet](#) (lu)
- integer(fgsl_int) function [fgsl_linalg_lu_sgndet](#) (lu, signum)
- complex(fgsl_double_complex) function [fgsl_linalg_complex_lu_sgndet](#) (lu, signum)
- integer(fgsl_int) function [fgsl_linalg_qr_decomp](#) (a, tau)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_decomp](#) (a, tau)
- integer(fgsl_int) function [fgsl_linalg_qr_decomp_r](#) (a, t)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_decomp_r](#) (a, t)
- integer(fgsl_int) function [fgsl_linalg_qr_solve](#) (qr, tau, b, x)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_solve](#) (qr, tau, b, x)
- integer(fgsl_int) function [fgsl_linalg_qr_solve_r](#) (qr, t, b, x)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_solve_r](#) (qr, t, b, x)
- integer(fgsl_int) function [fgsl_linalg_qr_svx](#) (qr, tau, x)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_svx](#) (qr, tau, x)
- integer(fgsl_int) function [fgsl_linalg_qr_issolve](#) (qr, tau, b, x, residual)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_issolve](#) (qr, tau, b, x, residual)
- integer(fgsl_int) function [fgsl_linalg_qr_issolve_r](#) (qr, t, b, x, work)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_issolve_r](#) (qr, t, b, x, work)
- integer(fgsl_int) function [fgsl_linalg_qr_qtvec](#) (qr, tau, v)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_qhvec](#) (qr, tau, v)
- integer(fgsl_int) function [fgsl_linalg_qr_qtvec_r](#) (qr, t, v, work)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_qhvec_r](#) (qr, t, v, work)
- integer(fgsl_int) function [fgsl_linalg_qr_qvec](#) (qr, tau, v)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_qvec](#) (qr, tau, v)
- integer(fgsl_int) function [fgsl_linalg_qr_qtmat](#) (qr, tau, a)
- integer(fgsl_int) function [fgsl_linalg_qr_qtmat_r](#) (qr, t, a, work)
- integer(fgsl_int) function [fgsl_linalg_qr_rsolve](#) (qr, b, x)
- integer(fgsl_int) function [fgsl_linalg_qr_rsvx](#) (qr, x)
- integer(fgsl_int) function [fgsl_linalg_qr_unpack](#) (qr, tau, q, r)
- integer(fgsl_int) function [fgsl_linalg_qr_unpack_r](#) (qr, t, q, r)
- integer(fgsl_int) function [fgsl_linalg_complex_qr_unpack_r](#) (qr, t, q, r)
- integer(fgsl_int) function [fgsl_linalg_qr_qrsolve](#) (q, r, b, x)
- integer(fgsl_int) function [fgsl_linalg_qr_update](#) (q, r, w, v)
- integer(fgsl_int) function [fgsl_linalg_r_solve](#) (r, b, x)
- integer(fgsl_int) function [fgsl_linalg_r_svx](#) (r, x)
- integer(fgsl_int) function [fgsl_linalg_qr_ur_decomp](#) (u, a, t)

- integer(fgsl_int) function [fgsl_linalg_qr_uu_decomp](#) (u1, u2, t)
- integer(fgsl_int) function [fgsl_linalg_qr_uu_issolve](#) (r, y, t, b, x, work)
- integer(fgsl_int) function [fgsl_linalg_qr_uu_qtvec](#) (y, t, b, work)
- integer(fgsl_int) function [fgsl_linalg_qr_uz_decomp](#) (u, a, t)
- integer(fgsl_int) function [fgsl_linalg_qr_ud_decomp](#) (u, d, y, t)
- integer(fgsl_int) function [fgsl_linalg_qr_ud_issolve](#) (r, y, t, b, x, work)
- integer(fgsl_int) function [fgsl_linalg_qrpt_decomp](#) (a, tau, p, signum, norm)
- integer(fgsl_int) function [fgsl_linalg_qrpt_decomp2](#) (a, q, r, tau, p, signum, norm)
- integer(fgsl_int) function [fgsl_linalg_qrpt_solve](#) (qr, tau, p, b, x)
- integer(fgsl_int) function [fgsl_linalg_qrpt_svx](#) (qr, tau, p, x)
- integer(fgsl_int) function [fgsl_linalg_qrpt_issolve](#) (qr, tau, p, b, x, residual)
- integer(fgsl_int) function [fgsl_linalg_qrpt_issolve2](#) (qr, tau, p, b, rank, x, residual)
- integer(fgsl_int) function [fgsl_linalg_qrpt_qrsolve](#) (q, r, p, b, x)
- integer(fgsl_int) function [fgsl_linalg_qrpt_update](#) (q, r, p, w, v)
- integer(fgsl_int) function [fgsl_linalg_qrpt_resolve](#) (qr, p, b, x)
- integer(fgsl_int) function [fgsl_linalg_qrpt_rsvx](#) (qr, p, x)
- integer(fgsl_size_t) function [fgsl_linalg_qrpt_rank](#) (qr, tol)
- integer(fgsl_int) function [fgsl_linalg_qrpt_rcond](#) (qr, rcond, work)
- integer(fgsl_int) function [fgsl_linalg_lq_decomp](#) (a, tau)
- integer(fgsl_int) function [fgsl_linalg_lq_issolve](#) (lq, tau, b, x, residual)
- integer(fgsl_int) function [fgsl_linalg_lq_unpack](#) (lq, tau, q, l)
- integer(fgsl_int) function [fgsl_linalg_lq_qtvec](#) (lq, tau, v)
- integer(fgsl_int) function [fgsl_linalg_ql_decomp](#) (a, tau)
- integer(fgsl_int) function [fgsl_linalg_ql_unpack](#) (ql, tau, q, l)
- integer(fgsl_int) function [fgsl_linalg_cod_decomp](#) (a, tau_q, tau_z, p, rank, work)
- integer(fgsl_int) function [fgsl_linalg_cod_decomp_e](#) (a, tau_q, tau_z, p, tol, rank, work)
- integer(fgsl_int) function [fgsl_linalg_cod_issolve](#) (qrzt, tau_q, tau_z, p, rank, b, x, residual)
- integer(fgsl_int) function [fgsl_linalg_cod_issolve2](#) (lambda, qrzt, tau_q, tau_z, p, rank, b, x, residual, s, work)
- integer(fgsl_int) function [fgsl_linalg_cod_unpack](#) (qrzt, tau_q, tau_z, p, rank, q, r, z)
- integer(fgsl_int) function [fgsl_linalg_cod_matz](#) (qrzt, tau_z, rank, a, work)
- integer(fgsl_int) function [fgsl_linalg_sv_decomp](#) (a, v, s, work)
- integer(fgsl_int) function [fgsl_linalg_sv_decomp_mod](#) (a, x, v, s, work)
- integer(fgsl_int) function [fgsl_linalg_sv_decomp_jacobi](#) (a, v, s)
- integer(fgsl_int) function [fgsl_linalg_sv_solve](#) (u, v, s, b, x)
- integer(fgsl_int) function [fgsl_linalg_sv_leverage](#) (u, h)
- integer(fgsl_int) function [fgsl_linalg_cholesky_decomp1](#) (a)
- integer(fgsl_int) function [fgsl_linalg_cholesky_decomp](#) (a)
- integer(fgsl_int) function [fgsl_linalg_complex_cholesky_decomp](#) (a)
- integer(fgsl_int) function [fgsl_linalg_cholesky_solve](#) (chol, b, x)
- integer(fgsl_int) function [fgsl_linalg_complex_cholesky_solve](#) (chol, b, x)
- integer(fgsl_int) function [fgsl_linalg_cholesky_svx](#) (chol, x)
- integer(fgsl_int) function [fgsl_linalg_complex_cholesky_svx](#) (chol, x)
- integer(fgsl_int) function [fgsl_linalg_cholesky_decomp2](#) (a, s)
- integer(fgsl_int) function [fgsl_linalg_cholesky_solve2](#) (chol, s, b, x)
- integer(fgsl_int) function [fgsl_linalg_cholesky_svx2](#) (chol, s, x)
- integer(fgsl_int) function [fgsl_linalg_cholesky_invert](#) (chol)
- integer(fgsl_int) function [fgsl_linalg_complex_cholesky_invert](#) (chol)
- integer(fgsl_int) function [fgsl_linalg_cholesky_scale](#) (a, s)
- integer(fgsl_int) function [fgsl_linalg_cholesky_scale_apply](#) (a, s)
- integer(fgsl_int) function [fgsl_linalg_cholesky_rcond](#) (chol, rcond, work)
- integer(fgsl_int) function [fgsl_linalg_pcholesky_decomp](#) (a, p)
- integer(fgsl_int) function [fgsl_linalg_pcholesky_solve](#) (ldlt, p, b, x)
- integer(fgsl_int) function [fgsl_linalg_pcholesky_svx](#) (ldlt, p, x)
- integer(fgsl_int) function [fgsl_linalg_pcholesky_decomp2](#) (a, p, s)
- integer(fgsl_int) function [fgsl_linalg_pcholesky_solve2](#) (ldlt, p, s, b, x)

- integer(fgsl_int) function [fgsl_linalg_pcholesky_svx2](#) (ldlt, p, s, x)
- integer(fgsl_int) function [fgsl_linalg_pcholesky_invert](#) (ldlt, p, ainv)
- integer(fgsl_int) function [fgsl_linalg_pcholesky_rcond](#) (ldlt, p, rcond, work)
- integer(fgsl_int) function [fgsl_linalg_mcholesky_decomp](#) (a, p, e)
- integer(fgsl_int) function [fgsl_linalg_mcholesky_solve](#) (ldlt, p, b, x)
- integer(fgsl_int) function [fgsl_linalg_mcholesky_svx](#) (ldlt, p, x)
- integer(fgsl_int) function [fgsl_linalg_mcholesky_invert](#) (ldlt, p, ainv)
- integer(fgsl_int) function [fgsl_linalg_mcholesky_rcond](#) (ldlt, p, rcond, work)
- integer(fgsl_int) function [fgsl_linalg_ldlt_decomp](#) (a)
- integer(fgsl_int) function [fgsl_linalg_ldlt_solve](#) (ldlt, b, x)
- integer(fgsl_int) function [fgsl_linalg_ldlt_svx](#) (ldlt, x)
- integer(fgsl_int) function [fgsl_linalg_ldlt_rcond](#) (ldlt, rcond, w)
- integer(fgsl_int) function [fgsl_linalg_symmtd_decomp](#) (a, tau)
- integer(fgsl_int) function [fgsl_linalg_symmtd_unpack](#) (a, tau, q, diag, subdiag)
- integer(fgsl_int) function [fgsl_linalg_symmtd_unpack_t](#) (a, diag, subdiag)
- integer(fgsl_int) function [fgsl_linalg_hermttd_decomp](#) (a, tau)
- integer(fgsl_int) function [fgsl_linalg_hermttd_unpack](#) (a, tau, q, diag, subdiag)
- integer(fgsl_int) function [fgsl_linalg_hermttd_unpack_t](#) (a, diag, subdiag)
- integer(fgsl_int) function [fgsl_linalg_hessenberg_decomp](#) (a, tau)
- integer(fgsl_int) function [fgsl_linalg_hessenberg_unpack](#) (h, tau, u)
- integer(fgsl_int) function [fgsl_linalg_hessenberg_unpack_accum](#) (h, tau, v)
- integer(fgsl_int) function [fgsl_linalg_hessenberg_set_zero](#) (h)
- integer(fgsl_int) function [fgsl_linalg_hesstri_decomp](#) (a, b, u, v, work)
- integer(fgsl_int) function [fgsl_linalg_bidiag_decomp](#) (a, tau_u, tau_v)
- integer(fgsl_int) function [fgsl_linalg_bidiag_unpack](#) (a, tau_u, u, tau_v, v, diag, superdiag)
- integer(fgsl_int) function [fgsl_linalg_bidiag_unpack2](#) (a, tau_u, tau_v, v)
- integer(fgsl_int) function [fgsl_linalg_bidiag_unpack_b](#) (a, diag, superdiag)
- real(fgsl_double) function [fgsl_linalg_householder_transform](#) (v)
- complex(fgsl_double_complex) function [fgsl_linalg_complex_householder_transform](#) (v)
- integer(fgsl_int) function [fgsl_linalg_householder_hm](#) (tau, v, a)
- integer(fgsl_int) function [fgsl_linalg_complex_householder_hm](#) (tau, v, a)
- integer(fgsl_int) function [fgsl_linalg_householder_mh](#) (tau, v, a)
- integer(fgsl_int) function [fgsl_linalg_complex_householder_mh](#) (tau, v, a)
- integer(fgsl_int) function [fgsl_linalg_householder_hv](#) (tau, v, w)
- integer(fgsl_int) function [fgsl_linalg_complex_householder_hv](#) (tau, v, w)
- integer(fgsl_int) function [fgsl_linalg_hh_solve](#) (a, b, x)
- integer(fgsl_int) function [fgsl_linalg_hh_svx](#) (a, x)
- integer(c_int) function [fgsl_linalg_solve_tridiag](#) (diag, e, f, b, x)
- integer(c_int) function [fgsl_linalg_solve_symm_tridiag](#) (diag, e, b, x)
- integer(c_int) function [fgsl_linalg_solve_cyc_tridiag](#) (diag, e, f, b, x)
- integer(c_int) function [fgsl_linalg_solve_symm_cyc_tridiag](#) (diag, e, b, x)
- integer(fgsl_int) function [fgsl_linalg_qr_matq](#) (QR, tau, A)
- subroutine [fgsl_linalg_givens](#) (a, b, c, s)
- subroutine [fgsl_linalg_givens_gv](#) (v, i, j, c, s)
- integer(fgsl_int) function [fgsl_linalg_tri_invert](#) (uplo, diag, t)
- integer(fgsl_int) function [fgsl_linalg_complex_tri_invert](#) (uplo, diag, t)
- integer(fgsl_int) function [fgsl_linalg_tri_ltl](#) (l)
- integer(fgsl_int) function [fgsl_linalg_complex_tri_lhl](#) (l)
- integer(fgsl_int) function [fgsl_linalg_tri_ul](#) (lu)
- integer(fgsl_int) function [fgsl_linalg_complex_tri_ul](#) (lu)
- integer(fgsl_int) function [fgsl_linalg_tri_rcond](#) (uplo, a, rcond, work)
- integer(fgsl_int) function [fgsl_linalg_tri_upper_invert](#) (t)
- integer(fgsl_int) function [fgsl_linalg_tri_lower_invert](#) (t)
- integer(fgsl_int) function [fgsl_linalg_tri_upper_unit_invert](#) (t)
- integer(fgsl_int) function [fgsl_linalg_tri_lower_unit_invert](#) (t)

- integer(fgsl_int) function [fgsl_linalg_tri_upper_rcond](#) (t, rcond, work)
- integer(fgsl_int) function [fgsl_linalg_tri_lower_rcond](#) (t, rcond, work)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_decomp](#) (a)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_solve](#) (llt, b, x)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_solvem](#) (llt, b, x)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_svx](#) (llt, x)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_svxm](#) (llt, x)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_invert](#) (llt, ainv)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_unpack](#) (llt, l)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_scale](#) (a, s)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_scale_apply](#) (a, s)
- integer(fgsl_int) function [fgsl_linalg_cholesky_band_rcond](#) (llt, rcond, w)
- integer(fgsl_int) function [fgsl_linalg_ldlt_band_decomp](#) (a)
- integer(fgsl_int) function [fgsl_linalg_ldlt_band_solve](#) (ldlt, b, x)
- integer(fgsl_int) function [fgsl_linalg_ldlt_band_svx](#) (ldlt, x)
- integer(fgsl_int) function [fgsl_linalg_ldlt_band_unpack](#) (ldlt, l, d)
- integer(fgsl_int) function [fgsl_linalg_ldlt_band_rcond](#) (ldlt, rcond, w)
- integer(fgsl_int) function [fgsl_linalg_balance_matrix](#) (a, d)

49.33.1 Function/Subroutine Documentation

49.33.1.1 fgsl_linalg_balance_matrix()

```
integer(fgsl_int) function fgsl_linalg_balance_matrix (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) d )
```

49.33.1.2 fgsl_linalg_bidiag_decomp()

```
integer(fgsl_int) function fgsl_linalg_bidiag_decomp (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) tau_u,
    type(fgsl_vector), intent(inout) tau_v )
```

49.33.1.3 fgsl_linalg_bidiag_unpack()

```
integer(fgsl_int) function fgsl_linalg_bidiag_unpack (
    type(fgsl_matrix), intent(in) a,
    type(fgsl_vector), intent(in) tau_u,
    type(fgsl_matrix), intent(inout) u,
    type(fgsl_vector), intent(in) tau_v,
    type(fgsl_matrix), intent(inout) v,
    type(fgsl_vector), intent(inout) diag,
    type(fgsl_vector), intent(inout) superdiag )
```

49.33.1.4 fgsl_linalg_bidiag_unpack2()

```
integer(fgsl_int) function fgsl_linalg_bidiag_unpack2 (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(in) tau_u,
    type(fgsl_vector), intent(in) tau_v,
    type(fgsl_matrix), intent(inout) v )
```

49.33.1.5 fgsl_linalg_bidiag_unpack_b()

```
integer(fgsl_int) function fgsl_linalg_bidiag_unpack_b (
    type(fgsl_matrix), intent(in) a,
    type(fgsl_vector), intent(inout) diag,
    type(fgsl_vector), intent(inout) superdiag )
```

49.33.1.6 fgsl_linalg_cholesky_band_decomp()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_decomp (
    type(fgsl_matrix), intent(inout) a )
```

49.33.1.7 fgsl_linalg_cholesky_band_invert()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_invert (
    type(fgsl_matrix), intent(in) llt,
    type(fgsl_matrix), intent(inout) ainv )
```

49.33.1.8 fgsl_linalg_cholesky_band_rcond()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_rcond (
    type(fgsl_matrix), intent(in) llt,
    real(fgsl_double), intent(inout) rcond,
    type(fgsl_vector), intent(inout) w )
```

49.33.1.9 fgsl_linalg_cholesky_band_scale()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_scale (
    type(fgsl_matrix), intent(in) a,
    type(fgsl_vector), intent(inout) s )
```

49.33.1.10 fgsl_linalg_cholesky_band_scale_apply()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_scale_apply (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(in) s )
```

49.33.1.11 fgsl_linalg_cholesky_band_solve()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_solve (
    type(fgsl_matrix), intent(in) llt,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.12 fgsl_linalg_cholesky_band_solve()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_solve (
    type(fgsl_matrix), intent(in) llt,
    type(fgsl_matrix), intent(in) b,
    type(fgsl_matrix), intent(inout) x )
```

49.33.1.13 fgsl_linalg_cholesky_band_svx()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_svx (
    type(fgsl_matrix), intent(in) llt,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.14 fgsl_linalg_cholesky_band_svxm()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_svxm (
    type(fgsl_matrix), intent(in) llt,
    type(fgsl_matrix), intent(inout) x )
```

49.33.1.15 fgsl_linalg_cholesky_band_unpack()

```
integer(fgsl_int) function fgsl_linalg_cholesky_band_unpack (
    type(fgsl_matrix), intent(in) llt,
    type(fgsl_matrix), intent(inout) l )
```

49.33.1.16 fgsl_linalg_cholesky_decomp()

```
integer(fgsl_int) function fgsl_linalg_cholesky_decomp (
    type(fgsl_matrix), intent(inout) a )
```

49.33.1.17 fgsl_linalg_cholesky_decomp1()

```
integer(fgsl_int) function fgsl_linalg_cholesky_decomp1 (
    type(fgsl_matrix), intent(inout) a )
```

49.33.1.18 fgsl_linalg_cholesky_decomp2()

```
integer(fgsl_int) function fgsl_linalg_cholesky_decomp2 (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) s )
```

49.33.1.19 fgsl_linalg_cholesky_invert()

```
integer(fgsl_int) function fgsl_linalg_cholesky_invert (
    type(fgsl_matrix), intent(inout) chol )
```

49.33.1.20 fgsl_linalg_cholesky_rcond()

```
integer(fgsl_int) function fgsl_linalg_cholesky_rcond (
    type(fgsl_matrix), intent(in) chol,
    real(fgsl_double), intent(inout) rcond,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.21 fgsl_linalg_cholesky_scale()

```
integer(fgsl_int) function fgsl_linalg_cholesky_scale (
    type(fgsl_matrix), intent(in) a,
    type(fgsl_vector), intent(inout) s )
```

49.33.1.22 fgsl_linalg_cholesky_scale_apply()

```
integer(fgsl_int) function fgsl_linalg_cholesky_scale_apply (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_vector), intent(in) s )
```

49.33.1.23 fgsl_linalg_cholesky_solve()

```
integer(fgsl_int) function fgsl_linalg_cholesky_solve (  
    type(fgsl_matrix), intent(in) chol,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.24 fgsl_linalg_cholesky_solve2()

```
integer(fgsl_int) function fgsl_linalg_cholesky_solve2 (  
    type(fgsl_matrix), intent(in) chol,  
    type(fgsl_vector), intent(in) s,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.25 fgsl_linalg_cholesky_svx()

```
integer(fgsl_int) function fgsl_linalg_cholesky_svx (  
    type(fgsl_matrix), intent(in) chol,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.26 fgsl_linalg_cholesky_svx2()

```
integer(fgsl_int) function fgsl_linalg_cholesky_svx2 (  
    type(fgsl_matrix), intent(in) chol,  
    type(fgsl_vector), intent(in) s,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.27 fgsl_linalg_cod_decomp()

```
integer(fgsl_int) function fgsl_linalg_cod_decomp (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) tau_q,
    type(fgsl_vector), intent(inout) tau_z,
    type(fgsl_permutation), intent(inout) p,
    integer(fgsl_size_t), intent(inout) rank,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.28 fgsl_linalg_cod_decomp_e()

```
integer(fgsl_int) function fgsl_linalg_cod_decomp_e (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) tau_q,
    type(fgsl_vector), intent(inout) tau_z,
    type(fgsl_permutation), intent(inout) p,
    real(fgsl_double), intent(in) tol,
    integer(fgsl_size_t), intent(inout) rank,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.29 fgsl_linalg_cod_lssolve()

```
integer(fgsl_int) function fgsl_linalg_cod_lssolve (
    type(fgsl_matrix), intent(in) qrzt,
    type(fgsl_vector), intent(in) tau_q,
    type(fgsl_vector), intent(in) tau_z,
    type(fgsl_permutation), intent(in) p,
    integer(fgsl_size_t), intent(in) rank,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x,
    type(fgsl_vector), intent(inout) residual )
```

49.33.1.30 fgsl_linalg_cod_lssolve2()

```
integer(fgsl_int) function fgsl_linalg_cod_lssolve2 (
    real(fgsl_double), intent(in) lambda,
    type(fgsl_matrix), intent(in) qrzt,
    type(fgsl_vector), intent(in) tau_q,
    type(fgsl_vector), intent(in) tau_z,
    type(fgsl_permutation), intent(in) p,
    integer(fgsl_size_t), intent(in) rank,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x,
    type(fgsl_vector), intent(inout) residual,
    type(fgsl_matrix), intent(inout) s,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.31 fgsl_linalg_cod_matz()

```
integer(fgsl_int) function fgsl_linalg_cod_matz (
    type(fgsl_matrix), intent(in)  qrzt,
    type(fgsl_vector), intent(in)  tau_z,
    integer(fgsl_size_t), intent(in) rank,
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.32 fgsl_linalg_cod_unpack()

```
integer(fgsl_int) function fgsl_linalg_cod_unpack (
    type(fgsl_matrix), intent(in)  qrzt,
    type(fgsl_vector), intent(in)  tau_q,
    type(fgsl_vector), intent(in)  tau_z,
    type(fgsl_permutation), intent(in) p,
    integer(fgsl_size_t), intent(in) rank,
    type(fgsl_matrix), intent(inout) q,
    type(fgsl_matrix), intent(inout) r,
    type(fgsl_matrix), intent(inout) z )
```

49.33.1.33 fgsl_linalg_complex_cholesky_decomp()

```
integer(fgsl_int) function fgsl_linalg_complex_cholesky_decomp (
    type(fgsl_matrix_complex), intent(inout) a )
```

49.33.1.34 fgsl_linalg_complex_cholesky_invert()

```
integer(fgsl_int) function fgsl_linalg_complex_cholesky_invert (
    type(fgsl_matrix_complex), intent(inout) chol )
```

49.33.1.35 fgsl_linalg_complex_cholesky_solve()

```
integer(fgsl_int) function fgsl_linalg_complex_cholesky_solve (
    type(fgsl_matrix_complex), intent(in)  chol,
    type(fgsl_vector_complex), intent(in)  b,
    type(fgsl_vector_complex), intent(inout) x )
```


49.33.1.36 fgsl_linalg_complex_cholesky_svx()

```
integer(fgsl_int) function fgsl_linalg_complex_cholesky_svx (
    type(fgsl_matrix_complex), intent(in) chol,
    type(fgsl_vector_complex), intent(inout) x )
```

49.33.1.37 fgsl_linalg_complex_householder_hm()

```
integer(fgsl_int) function fgsl_linalg_complex_householder_hm (
    complex(fgsl_double_complex), intent(in) tau,
    type(fgsl_vector_complex), intent(in) v,
    type(fgsl_matrix_complex), intent(inout) a )
```

49.33.1.38 fgsl_linalg_complex_householder_hv()

```
integer(fgsl_int) function fgsl_linalg_complex_householder_hv (
    complex(fgsl_double_complex), intent(in) tau,
    type(fgsl_vector_complex), intent(in) v,
    type(fgsl_vector_complex), intent(inout) w )
```

49.33.1.39 fgsl_linalg_complex_householder_mh()

```
integer(fgsl_int) function fgsl_linalg_complex_householder_mh (
    complex(fgsl_double_complex), intent(in) tau,
    type(fgsl_vector_complex), intent(in) v,
    type(fgsl_matrix_complex), intent(inout) a )
```

49.33.1.40 fgsl_linalg_complex_householder_transform()

```
complex(fgsl_double_complex) function fgsl_linalg_complex_householder_transform (
    type(fgsl_vector), intent(inout) v )
```

49.33.1.41 fgsl_linalg_complex_lu_decomp()

```
integer(fgsl_int) function fgsl_linalg_complex_lu_decomp (
    type(fgsl_matrix_complex) a,
    type(fgsl_permutation) p,
    integer(fgsl_int) signum )
```

49.33.1.42 fgsl_linalg_complex_lu_det()

```
complex(fgsl_double_complex) function fgsl_linalg_complex_lu_det (
    type(fgsl_matrix_complex), intent(in) lu,
    integer(fgsl_int), intent(in) signum )
```

49.33.1.43 fgsl_linalg_complex_lu_invert()

```
integer(fgsl_int) function fgsl_linalg_complex_lu_invert (
    type(fgsl_matrix_complex), intent(in) lu,
    type(fgsl_permutation), intent(in) p,
    type(fgsl_matrix_complex), intent(inout) inverse )
```

49.33.1.44 fgsl_linalg_complex_lu_invx()

```
integer(fgsl_int) function fgsl_linalg_complex_lu_invx (
    type(fgsl_matrix_complex), intent(inout) lu,
    type(fgsl_permutation), intent(in) p )
```

49.33.1.45 fgsl_linalg_complex_lu_lndet()

```
real(fgsl_double) function fgsl_linalg_complex_lu_lndet (
    type(fgsl_matrix_complex), intent(in) lu )
```

49.33.1.46 fgsl_linalg_complex_lu_refine()

```
integer(fgsl_int) function fgsl_linalg_complex_lu_refine (
    type(fgsl_matrix_complex), intent(in) a,
    type(fgsl_matrix_complex), intent(in) lu,
    type(fgsl_permutation), intent(in) p,
    type(fgsl_vector_complex), intent(in) b,
    type(fgsl_vector_complex), intent(inout) x,
    type(fgsl_vector_complex), intent(inout) residual )
```

49.33.1.47 fgsl_linalg_complex_lu_sgndet()

```
complex(fgsl_double_complex) function fgsl_linalg_complex_lu_sgndet (
    type(fgsl_matrix_complex), intent(in) lu,
    integer(fgsl_int), intent(in) signum )
```

49.33.1.48 fgsl_linalg_complex_lu_solve()

```
integer(fgsl_int) function fgsl_linalg_complex_lu_solve (  
    type(fgsl_matrix_complex), intent(in) lu,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector_complex), intent(in) b,  
    type(fgsl_vector_complex), intent(inout) x )
```

49.33.1.49 fgsl_linalg_complex_lu_svx()

```
integer(fgsl_int) function fgsl_linalg_complex_lu_svx (  
    type(fgsl_matrix_complex), intent(in) lu,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector_complex), intent(inout) x )
```

49.33.1.50 fgsl_linalg_complex_qr_decomp()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_decomp (  
    type(fgsl_matrix_complex), intent(inout) a,  
    type(fgsl_vector_complex), intent(inout) tau )
```

49.33.1.51 fgsl_linalg_complex_qr_decomp_r()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_decomp_r (  
    type(fgsl_matrix_complex), intent(inout) a,  
    type(fgsl_matrix_complex), intent(inout) t )
```

49.33.1.52 fgsl_linalg_complex_qr_issolve()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_issolve (  
    type(fgsl_matrix_complex), intent(in) qr,  
    type(fgsl_vector_complex), intent(in) tau,  
    type(fgsl_vector_complex), intent(in) b,  
    type(fgsl_vector_complex), intent(inout) x,  
    type(fgsl_vector_complex), intent(inout) residual )
```

49.33.1.53 fgsl_linalg_complex_qr_issolve_r()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_issolve_r (
    type(fgsl_matrix_complex), intent(in) qr,
    type(fgsl_matrix_complex), intent(in) t,
    type(fgsl_vector_complex), intent(in) b,
    type(fgsl_vector_complex), intent(inout) x,
    type(fgsl_vector_complex), intent(inout) work )
```

49.33.1.54 fgsl_linalg_complex_qr_qhvec()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_qhvec (
    type(fgsl_matrix_complex), intent(in) qr,
    type(fgsl_vector_complex), intent(in) tau,
    type(fgsl_vector_complex), intent(inout) v )
```

49.33.1.55 fgsl_linalg_complex_qr_qhvec_r()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_qhvec_r (
    type(fgsl_matrix_complex), intent(in) qr,
    type(fgsl_matrix_complex), intent(in) t,
    type(fgsl_vector_complex), intent(inout) v,
    type(fgsl_vector_complex), intent(inout) work )
```

49.33.1.56 fgsl_linalg_complex_qr_qvec()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_qvec (
    type(fgsl_matrix_complex), intent(in) qr,
    type(fgsl_vector_complex), intent(in) tau,
    type(fgsl_vector_complex), intent(inout) v )
```

49.33.1.57 fgsl_linalg_complex_qr_solve()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_solve (
    type(fgsl_matrix_complex), intent(in) qr,
    type(fgsl_vector_complex), intent(in) tau,
    type(fgsl_vector_complex), intent(in) b,
    type(fgsl_vector_complex), intent(inout) x )
```

49.33.1.58 fgsl_linalg_complex_qr_solve_r()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_solve_r (  
    type(fgsl_matrix_complex), intent(in) qr,  
    type(fgsl_matrix_complex), intent(in) t,  
    type(fgsl_vector_complex), intent(in) b,  
    type(fgsl_vector_complex), intent(inout) x )
```

49.33.1.59 fgsl_linalg_complex_qr_svx()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_svx (  
    type(fgsl_matrix_complex), intent(in) qr,  
    type(fgsl_vector_complex), intent(in) tau,  
    type(fgsl_vector_complex), intent(inout) x )
```

49.33.1.60 fgsl_linalg_complex_qr_unpack_r()

```
integer(fgsl_int) function fgsl_linalg_complex_qr_unpack_r (  
    type(fgsl_matrix_complex), intent(in) qr,  
    type(fgsl_matrix_complex), intent(in) t,  
    type(fgsl_matrix_complex), intent(inout) q,  
    type(fgsl_matrix_complex), intent(inout) r )
```

49.33.1.61 fgsl_linalg_complex_tri_invert()

```
integer(fgsl_int) function fgsl_linalg_complex_tri_invert (  
    integer(fgsl_int), intent(in) uplo,  
    integer(fgsl_int), intent(in) diag,  
    type(fgsl_matrix_complex), intent(inout) t )
```

49.33.1.62 fgsl_linalg_complex_tri_lhl()

```
integer(fgsl_int) function fgsl_linalg_complex_tri_lhl (  
    type(fgsl_matrix_complex), intent(inout) l )
```

49.33.1.63 fgsl_linalg_complex_tri_ul()

```
integer(fgsl_int) function fgsl_linalg_complex_tri_ul (  
    type(fgsl_matrix_complex), intent(inout) lu )
```

49.33.1.64 fgsl_linalg_givens()

```
subroutine fgsl_linalg_givens (
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    real(fgsl_double), intent(out) c,
    real(fgsl_double), intent(out) s )
```

49.33.1.65 fgsl_linalg_givens_gv()

```
subroutine fgsl_linalg_givens_gv (
    type(fgsl_vector), intent(inout) v,
    integer(fgsl_size_t), intent(in) i,
    integer(fgsl_size_t), intent(in) j,
    real(fgsl_double), intent(in) c,
    real(fgsl_double), intent(in) s )
```

49.33.1.66 fgsl_linalg_hermt_d_decomp()

```
integer(fgsl_int) function fgsl_linalg_hermt_d_decomp (
    type(fgsl_matrix_complex), intent(inout) a,
    type(fgsl_vector_complex), intent(inout) tau )
```

49.33.1.67 fgsl_linalg_hermt_d_unpack()

```
integer(fgsl_int) function fgsl_linalg_hermt_d_unpack (
    type(fgsl_matrix_complex), intent(in) a,
    type(fgsl_vector_complex), intent(in) tau,
    type(fgsl_matrix_complex), intent(inout) q,
    type(fgsl_vector), intent(inout) diag,
    type(fgsl_vector), intent(inout) subdiag )
```

49.33.1.68 fgsl_linalg_hermt_d_unpack_t()

```
integer(fgsl_int) function fgsl_linalg_hermt_d_unpack_t (
    type(fgsl_matrix_complex), intent(in) a,
    type(fgsl_vector), intent(inout) diag,
    type(fgsl_vector), intent(inout) subdiag )
```

49.33.1.69 fgsl_linalg_hessenberg_decomp()

```
integer(fgsl_int) function fgsl_linalg_hessenberg_decomp (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) tau )
```

49.33.1.70 fgsl_linalg_hessenberg_set_zero()

```
integer(fgsl_int) function fgsl_linalg_hessenberg_set_zero (
    type(fgsl_matrix), intent(inout) h )
```

49.33.1.71 fgsl_linalg_hessenberg_unpack()

```
integer(fgsl_int) function fgsl_linalg_hessenberg_unpack (
    type(fgsl_matrix), intent(in) h,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_matrix), intent(inout) u )
```

49.33.1.72 fgsl_linalg_hessenberg_unpack_accum()

```
integer(fgsl_int) function fgsl_linalg_hessenberg_unpack_accum (
    type(fgsl_matrix), intent(in) h,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_matrix), intent(inout) v )
```

49.33.1.73 fgsl_linalg_hesstri_decomp()

```
integer(fgsl_int) function fgsl_linalg_hesstri_decomp (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_matrix), intent(inout) b,
    type(fgsl_matrix), intent(inout) u,
    type(fgsl_matrix), intent(inout) v,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.74 fgsl_linalg_hh_solve()

```
integer(fgsl_int) function fgsl_linalg_hh_solve (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.75 fgsl_linalg_hh_svx()

```
integer(fgsl_int) function fgsl_linalg_hh_svx (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.76 fgsl_linalg_householder_hm()

```
integer(fgsl_int) function fgsl_linalg_householder_hm (
    real(fgsl_double), intent(in) tau,
    type(fgsl_vector), intent(in) v,
    type(fgsl_matrix), intent(inout) a )
```

49.33.1.77 fgsl_linalg_householder_hv()

```
integer(fgsl_int) function fgsl_linalg_householder_hv (
    real(fgsl_double), intent(in) tau,
    type(fgsl_vector), intent(in) v,
    type(fgsl_vector), intent(inout) w )
```

49.33.1.78 fgsl_linalg_householder_mh()

```
integer(fgsl_int) function fgsl_linalg_householder_mh (
    real(fgsl_double), intent(in) tau,
    type(fgsl_vector), intent(in) v,
    type(fgsl_matrix), intent(inout) a )
```

49.33.1.79 fgsl_linalg_householder_transform()

```
real(fgsl_double) function fgsl_linalg_householder_transform (
    type(fgsl_vector), intent(inout) v )
```

49.33.1.80 fgsl_linalg_ldlt_band_decomp()

```
integer(fgsl_int) function fgsl_linalg_ldlt_band_decomp (
    type(fgsl_matrix), intent(inout) a )
```


49.33.1.81 fgsl_linalg_ldlt_band_rcond()

```
integer(fgsl_int) function fgsl_linalg_ldlt_band_rcond (
    type(fgsl_matrix), intent(in) ldlt,
    real(fgsl_double), intent(inout) rcond,
    type(fgsl_vector), intent(inout) w )
```

49.33.1.82 fgsl_linalg_ldlt_band_solve()

```
integer(fgsl_int) function fgsl_linalg_ldlt_band_solve (
    type(fgsl_matrix), intent(in) ldlt,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.83 fgsl_linalg_ldlt_band_svx()

```
integer(fgsl_int) function fgsl_linalg_ldlt_band_svx (
    type(fgsl_matrix), intent(in) ldlt,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.84 fgsl_linalg_ldlt_band_unpack()

```
integer(fgsl_int) function fgsl_linalg_ldlt_band_unpack (
    type(fgsl_matrix), intent(in) ldlt,
    type(fgsl_matrix), intent(inout) l,
    type(fgsl_vector), intent(inout) d )
```

49.33.1.85 fgsl_linalg_ldlt_decomp()

```
integer(fgsl_int) function fgsl_linalg_ldlt_decomp (
    type(fgsl_matrix), intent(inout) a )
```

49.33.1.86 fgsl_linalg_ldlt_rcond()

```
integer(fgsl_int) function fgsl_linalg_ldlt_rcond (
    type(fgsl_matrix), intent(in) ldlt,
    real(fgsl_double), intent(inout) rcond,
    type(fgsl_vector), intent(inout) w )
```

49.33.1.87 fgsl_linalg_ldlt_solve()

```
integer(fgsl_int) function fgsl_linalg_ldlt_solve (
    type(fgsl_matrix), intent(in)  ldlt,
    type(fgsl_vector), intent(in)  b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.88 fgsl_linalg_ldlt_svx()

```
integer(fgsl_int) function fgsl_linalg_ldlt_svx (
    type(fgsl_matrix), intent(in)  ldlt,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.89 fgsl_linalg_lq_decomp()

```
integer(fgsl_int) function fgsl_linalg_lq_decomp (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) tau )
```

49.33.1.90 fgsl_linalg_lq_issolve()

```
integer(fgsl_int) function fgsl_linalg_lq_issolve (
    type(fgsl_matrix), intent(in)  lq,
    type(fgsl_vector), intent(in)  tau,
    type(fgsl_vector), intent(in)  b,
    type(fgsl_vector), intent(inout) x,
    type(fgsl_vector), intent(inout) residual )
```

49.33.1.91 fgsl_linalg_lq_qtvec()

```
integer(fgsl_int) function fgsl_linalg_lq_qtvec (
    type(fgsl_matrix), intent(in)  lq,
    type(fgsl_vector), intent(in)  tau,
    type(fgsl_vector), intent(inout) v )
```

49.33.1.92 fgsl_linalg_lq_unpack()

```
integer(fgsl_int) function fgsl_linalg_lq_unpack (
    type(fgsl_matrix), intent(in) lq,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_matrix), intent(inout) q,
    type(fgsl_matrix), intent(inout) l )
```

49.33.1.93 fgsl_linalg_lu_decomp()

```
integer(fgsl_int) function fgsl_linalg_lu_decomp (
    type(fgsl_matrix) a,
    type(fgsl_permutation) p,
    integer(fgsl_int) signum )
```

49.33.1.94 fgsl_linalg_lu_det()

```
real(fgsl_double) function fgsl_linalg_lu_det (
    type(fgsl_matrix), intent(in) lu,
    integer(fgsl_int), intent(in) signum )
```

49.33.1.95 fgsl_linalg_lu_invert()

```
integer(fgsl_int) function fgsl_linalg_lu_invert (
    type(fgsl_matrix), intent(in) lu,
    type(fgsl_permutation), intent(in) p,
    type(fgsl_matrix), intent(inout) inverse )
```

49.33.1.96 fgsl_linalg_lu_invx()

```
integer(fgsl_int) function fgsl_linalg_lu_invx (
    type(fgsl_matrix), intent(in) lu,
    type(fgsl_permutation), intent(in) p )
```

49.33.1.97 fgsl_linalg_lu_lndet()

```
real(fgsl_double) function fgsl_linalg_lu_lndet (
    type(fgsl_matrix), intent(in) lu )
```

49.33.1.98 fgsl_linalg_lu_refine()

```
integer(fgsl_int) function fgsl_linalg_lu_refine (  
    type(fgsl_matrix), intent(in) a,  
    type(fgsl_matrix), intent(in) lu,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x,  
    type(fgsl_vector), intent(inout) residual )
```

49.33.1.99 fgsl_linalg_lu_sgndet()

```
integer(fgsl_int) function fgsl_linalg_lu_sgndet (  
    type(fgsl_matrix), intent(in) lu,  
    integer(fgsl_int), intent(in) signum )
```

49.33.1.100 fgsl_linalg_lu_solve()

```
integer(fgsl_int) function fgsl_linalg_lu_solve (  
    type(fgsl_matrix), intent(in) lu,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.101 fgsl_linalg_lu_svx()

```
integer(fgsl_int) function fgsl_linalg_lu_svx (  
    type(fgsl_matrix), intent(in) lu,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.102 fgsl_linalg_mcholesky_decomp()

```
integer(fgsl_int) function fgsl_linalg_mcholesky_decomp (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_permutation), intent(inout) p,  
    type(fgsl_vector), intent(inout) e )
```

49.33.1.103 fgsl_linalg_mcholesky_invert()

```
integer(fgsl_int) function fgsl_linalg_mcholesky_invert (  
    type(fgsl_matrix), intent(in) ldlt,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_matrix), intent(inout) ainv )
```

49.33.1.104 fgsl_linalg_mcholesky_rcond()

```
integer(fgsl_int) function fgsl_linalg_mcholesky_rcond (  
    type(fgsl_matrix), intent(in) ldlt,  
    type(fgsl_permutation), intent(in) p,  
    real(fgsl_double), intent(inout) rcond,  
    type(fgsl_vector), intent(inout) work )
```

49.33.1.105 fgsl_linalg_mcholesky_solve()

```
integer(fgsl_int) function fgsl_linalg_mcholesky_solve (  
    type(fgsl_matrix), intent(in) ldlt,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.106 fgsl_linalg_mcholesky_svx()

```
integer(fgsl_int) function fgsl_linalg_mcholesky_svx (  
    type(fgsl_matrix), intent(in) ldlt,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.107 fgsl_linalg_pcholesky_decomp()

```
integer(fgsl_int) function fgsl_linalg_pcholesky_decomp (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_permutation), intent(inout) p )
```

49.33.1.108 fgsl_linalg_pcholesky_decomp2()

```
integer(fgsl_int) function fgsl_linalg_pcholesky_decomp2 (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_permutation), intent(inout) p,
    type(fgsl_vector), intent(inout) s )
```

49.33.1.109 fgsl_linalg_pcholesky_invert()

```
integer(fgsl_int) function fgsl_linalg_pcholesky_invert (
    type(fgsl_matrix), intent(in) ldlt,
    type(fgsl_permutation), intent(in) p,
    type(fgsl_matrix), intent(inout) ainvt )
```

49.33.1.110 fgsl_linalg_pcholesky_rcond()

```
integer(fgsl_int) function fgsl_linalg_pcholesky_rcond (
    type(fgsl_matrix), intent(in) ldlt,
    type(fgsl_permutation), intent(in) p,
    real(fgsl_double), intent(inout) rcond,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.111 fgsl_linalg_pcholesky_solve()

```
integer(fgsl_int) function fgsl_linalg_pcholesky_solve (
    type(fgsl_matrix), intent(in) ldlt,
    type(fgsl_permutation), intent(in) p,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.112 fgsl_linalg_pcholesky_solve2()

```
integer(fgsl_int) function fgsl_linalg_pcholesky_solve2 (
    type(fgsl_matrix), intent(in) ldlt,
    type(fgsl_permutation), intent(in) p,
    type(fgsl_vector), intent(in) s,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.113 fgsl_linalg_pcholesky_svx()

```
integer(fgsl_int) function fgsl_linalg_pcholesky_svx (  
    type(fgsl_matrix), intent(in) ldlt,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.114 fgsl_linalg_pcholesky_svx2()

```
integer(fgsl_int) function fgsl_linalg_pcholesky_svx2 (  
    type(fgsl_matrix), intent(in) ldlt,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(in) s,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.115 fgsl_linalg_ql_decomp()

```
integer(fgsl_int) function fgsl_linalg_ql_decomp (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_vector), intent(inout) tau )
```

49.33.1.116 fgsl_linalg_ql_unpack()

```
integer(fgsl_int) function fgsl_linalg_ql_unpack (  
    type(fgsl_matrix), intent(in) ql,  
    type(fgsl_vector), intent(in) tau,  
    type(fgsl_matrix), intent(inout) q,  
    type(fgsl_matrix), intent(inout) l )
```

49.33.1.117 fgsl_linalg_qr_decomp()

```
integer(fgsl_int) function fgsl_linalg_qr_decomp (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_vector), intent(inout) tau )
```

49.33.1.118 fgsl_linalg_qr_decomp_r()

```
integer(fgsl_int) function fgsl_linalg_qr_decomp_r (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_matrix), intent(inout) t )
```

49.33.1.119 fgsl_linalg_qr_lssolve()

```
integer(fgsl_int) function fgsl_linalg_qr_lssolve (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x,
    type(fgsl_vector), intent(inout) residual )
```

49.33.1.120 fgsl_linalg_qr_lssolve_r()

```
integer(fgsl_int) function fgsl_linalg_qr_lssolve_r (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_matrix), intent(in) t,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.121 fgsl_linalg_qr_matq()

```
integer(fgsl_int) function fgsl_linalg_qr_matq (
    type(fgsl_matrix), intent(in) QR,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_matrix), intent(inout) A )
```

49.33.1.122 fgsl_linalg_qr_qrsolve()

```
integer(fgsl_int) function fgsl_linalg_qr_qrsolve (
    type(fgsl_matrix), intent(in) q,
    type(fgsl_matrix), intent(in) r,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.123 fgsl_linalg_qr_qtmat()

```
integer(fgsl_int) function fgsl_linalg_qr_qtmat (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_matrix), intent(inout) a )
```


49.33.1.124 fgsl_linalg_qr_qtmat_r()

```
integer(fgsl_int) function fgsl_linalg_qr_qtmat_r (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_matrix), intent(in) t,
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_matrix), intent(inout) work )
```

49.33.1.125 fgsl_linalg_qr_qtvec()

```
integer(fgsl_int) function fgsl_linalg_qr_qtvec (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_vector), intent(inout) v )
```

49.33.1.126 fgsl_linalg_qr_qtvec_r()

```
integer(fgsl_int) function fgsl_linalg_qr_qtvec_r (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_matrix), intent(in) t,
    type(fgsl_vector), intent(inout) v,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.127 fgsl_linalg_qr_qvec()

```
integer(fgsl_int) function fgsl_linalg_qr_qvec (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_vector), intent(inout) v )
```

49.33.1.128 fgsl_linalg_qr_resolve()

```
integer(fgsl_int) function fgsl_linalg_qr_resolve (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.129 fgsl_linalg_qr_rsvx()

```
integer(fgsl_int) function fgsl_linalg_qr_rsvx (  
    type(fgsl_matrix), intent(in) qr,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.130 fgsl_linalg_qr_solve()

```
integer(fgsl_int) function fgsl_linalg_qr_solve (  
    type(fgsl_matrix), intent(in) qr,  
    type(fgsl_vector), intent(in) tau,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.131 fgsl_linalg_qr_solve_r()

```
integer(fgsl_int) function fgsl_linalg_qr_solve_r (  
    type(fgsl_matrix), intent(in) qr,  
    type(fgsl_matrix), intent(in) t,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.132 fgsl_linalg_qr_svx()

```
integer(fgsl_int) function fgsl_linalg_qr_svx (  
    type(fgsl_matrix), intent(in) qr,  
    type(fgsl_vector), intent(in) tau,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.133 fgsl_linalg_qr_ud_decomp()

```
integer(fgsl_int) function fgsl_linalg_qr_ud_decomp (  
    type(fgsl_matrix), intent(inout) u,  
    type(fgsl_vector), intent(inout) d,  
    type(fgsl_matrix), intent(inout) y,  
    type(fgsl_matrix), intent(inout) t )
```

49.33.1.134 fgsl_linalg_qr_ud_lssolve()

```
integer(fgsl_int) function fgsl_linalg_qr_ud_lssolve (
    type(fgsl_matrix), intent(in) r,
    type(fgsl_matrix), intent(in) y,
    type(fgsl_matrix), intent(in) t,
    type(fgsl_vector), intent(inout) b,
    type(fgsl_vector), intent(inout) x,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.135 fgsl_linalg_qr_unpack()

```
integer(fgsl_int) function fgsl_linalg_qr_unpack (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_matrix), intent(inout) q,
    type(fgsl_matrix), intent(inout) r )
```

49.33.1.136 fgsl_linalg_qr_unpack_r()

```
integer(fgsl_int) function fgsl_linalg_qr_unpack_r (
    type(fgsl_matrix), intent(in) qr,
    type(fgsl_matrix), intent(in) t,
    type(fgsl_matrix), intent(inout) q,
    type(fgsl_matrix), intent(inout) r )
```

49.33.1.137 fgsl_linalg_qr_update()

```
integer(fgsl_int) function fgsl_linalg_qr_update (
    type(fgsl_matrix), intent(inout) q,
    type(fgsl_matrix), intent(inout) r,
    type(fgsl_vector), intent(inout) w,
    type(fgsl_vector), intent(in) v )
```

49.33.1.138 fgsl_linalg_qr_ur_decomp()

```
integer(fgsl_int) function fgsl_linalg_qr_ur_decomp (
    type(fgsl_matrix), intent(inout) u,
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_matrix), intent(inout) t )
```

49.33.1.139 fgsl_linalg_qr_uu_decomp()

```
integer(fgsl_int) function fgsl_linalg_qr_uu_decomp (
    type(fgsl_matrix), intent(inout) u1,
    type(fgsl_matrix), intent(inout) u2,
    type(fgsl_matrix), intent(inout) t )
```

49.33.1.140 fgsl_linalg_qr_uu_issolve()

```
integer(fgsl_int) function fgsl_linalg_qr_uu_issolve (
    type(fgsl_matrix), intent(in) r,
    type(fgsl_matrix), intent(in) y,
    type(fgsl_matrix), intent(in) t,
    type(fgsl_vector), intent(inout) b,
    type(fgsl_vector), intent(inout) x,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.141 fgsl_linalg_qr_uu_qtvec()

```
integer(fgsl_int) function fgsl_linalg_qr_uu_qtvec (
    type(fgsl_matrix), intent(in) y,
    type(fgsl_matrix), intent(in) t,
    type(fgsl_vector), intent(inout) b,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.142 fgsl_linalg_qr_uz_decomp()

```
integer(fgsl_int) function fgsl_linalg_qr_uz_decomp (
    type(fgsl_matrix), intent(inout) u,
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_matrix), intent(inout) t )
```

49.33.1.143 fgsl_linalg_qrpt_decomp()

```
integer(fgsl_int) function fgsl_linalg_qrpt_decomp (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) tau,
    type(fgsl_permutation), intent(inout) p,
    integer(fgsl_int), intent(out) signum,
    type(fgsl_vector), intent(inout) norm )
```

49.33.1.144 fgsl_linalg_qrpt_decomp2()

```
integer(fgsl_int) function fgsl_linalg_qrpt_decomp2 (  
    type(fgsl_matrix), intent(in) a,  
    type(fgsl_matrix), intent(inout) q,  
    type(fgsl_matrix), intent(inout) r,  
    type(fgsl_vector), intent(inout) tau,  
    type(fgsl_permutation), intent(inout) p,  
    integer(fgsl_int), intent(out) signum,  
    type(fgsl_vector), intent(inout) norm )
```

49.33.1.145 fgsl_linalg_qrpt_lssolve()

```
integer(fgsl_int) function fgsl_linalg_qrpt_lssolve (  
    type(fgsl_matrix), intent(in) qr,  
    type(fgsl_vector), intent(in) tau,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x,  
    type(fgsl_vector), intent(inout) residual )
```

49.33.1.146 fgsl_linalg_qrpt_lssolve2()

```
integer(fgsl_int) function fgsl_linalg_qrpt_lssolve2 (  
    type(fgsl_matrix), intent(in) qr,  
    type(fgsl_vector), intent(in) tau,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(in) b,  
    integer(fgsl_size_t), intent(in) rank,  
    type(fgsl_vector), intent(inout) x,  
    type(fgsl_vector), intent(inout) residual )
```

49.33.1.147 fgsl_linalg_qrpt_qrsolve()

```
integer(fgsl_int) function fgsl_linalg_qrpt_qrsolve (  
    type(fgsl_matrix), intent(in) q,  
    type(fgsl_matrix), intent(in) r,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.148 fgsl_linalg_qrpt_rank()

```
integer(fgsl_size_t) function fgsl_linalg_qrpt_rank (  
    type(fgsl_matrix), intent(in) qr,  
    real(fgsl_double), intent(in) tol )
```

49.33.1.149 fgsl_linalg_qrpt_rcond()

```
integer(fgsl_int) function fgsl_linalg_qrpt_rcond (  
    type(fgsl_matrix), intent(in) qr,  
    real(fgsl_double), intent(inout) rcond,  
    type(fgsl_vector), intent(inout) work )
```

49.33.1.150 fgsl_linalg_qrpt_solve()

```
integer(fgsl_int) function fgsl_linalg_qrpt_solve (  
    type(fgsl_matrix), intent(in) qr,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.151 fgsl_linalg_qrpt_rsvx()

```
integer(fgsl_int) function fgsl_linalg_qrpt_rsvx (  
    type(fgsl_matrix), intent(in) qr,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.152 fgsl_linalg_qrpt_solve()

```
integer(fgsl_int) function fgsl_linalg_qrpt_solve (  
    type(fgsl_matrix), intent(in) qr,  
    type(fgsl_vector), intent(in) tau,  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.153 fgsl_linalg_qrpt_svx()

```
integer(fgsl_int) function fgsl_linalg_qrpt_svx (
    type(fgsl_matrix), intent(in)  qr,
    type(fgsl_vector), intent(in)  tau,
    type(fgsl_permutation), intent(in) p,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.154 fgsl_linalg_qrpt_update()

```
integer(fgsl_int) function fgsl_linalg_qrpt_update (
    type(fgsl_matrix), intent(inout) q,
    type(fgsl_matrix), intent(inout) r,
    type(fgsl_permutation), intent(in) p,
    type(fgsl_vector), intent(inout) w,
    type(fgsl_vector), intent(in) v )
```

49.33.1.155 fgsl_linalg_r_solve()

```
integer(fgsl_int) function fgsl_linalg_r_solve (
    type(fgsl_matrix), intent(in) r,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.156 fgsl_linalg_r_svx()

```
integer(fgsl_int) function fgsl_linalg_r_svx (
    type(fgsl_matrix), intent(in) r,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.157 fgsl_linalg_solve_cyc_tridiag()

```
integer(c_int) function fgsl_linalg_solve_cyc_tridiag (
    type(fgsl_vector), intent(in) diag,
    type(fgsl_vector), intent(in) e,
    type(fgsl_vector), intent(in) f,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.158 fgsl_linalg_solve_symm_cyc_tridiag()

```
integer(c_int) function fgsl_linalg_solve_symm_cyc_tridiag (  
    type(fgsl_vector), intent(in) diag,  
    type(fgsl_vector), intent(in) e,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.159 fgsl_linalg_solve_symm_tridiag()

```
integer(c_int) function fgsl_linalg_solve_symm_tridiag (  
    type(fgsl_vector), intent(in) diag,  
    type(fgsl_vector), intent(in) e,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.160 fgsl_linalg_solve_tridiag()

```
integer(c_int) function fgsl_linalg_solve_tridiag (  
    type(fgsl_vector), intent(in) diag,  
    type(fgsl_vector), intent(in) e,  
    type(fgsl_vector), intent(in) f,  
    type(fgsl_vector), intent(in) b,  
    type(fgsl_vector), intent(inout) x )
```

49.33.1.161 fgsl_linalg_sv_decomp()

```
integer(fgsl_int) function fgsl_linalg_sv_decomp (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_matrix), intent(inout) v,  
    type(fgsl_vector), intent(inout) s,  
    type(fgsl_vector), intent(inout) work )
```

49.33.1.162 fgsl_linalg_sv_decomp_jacobi()

```
integer(fgsl_int) function fgsl_linalg_sv_decomp_jacobi (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_matrix), intent(inout) v,  
    type(fgsl_vector), intent(inout) s )
```


49.33.1.163 fgsl_linalg_sv_decomp_mod()

```
integer(fgsl_int) function fgsl_linalg_sv_decomp_mod (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_matrix), intent(inout) x,
    type(fgsl_matrix), intent(inout) v,
    type(fgsl_vector), intent(inout) s,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.164 fgsl_linalg_sv_leverage()

```
integer(fgsl_int) function fgsl_linalg_sv_leverage (
    type(fgsl_matrix), intent(in) u,
    type(fgsl_vector), intent(inout) h )
```

49.33.1.165 fgsl_linalg_sv_solve()

```
integer(fgsl_int) function fgsl_linalg_sv_solve (
    type(fgsl_matrix), intent(in) u,
    type(fgsl_matrix), intent(in) v,
    type(fgsl_vector), intent(in) s,
    type(fgsl_vector), intent(in) b,
    type(fgsl_vector), intent(inout) x )
```

49.33.1.166 fgsl_linalg_symmtd_decomp()

```
integer(fgsl_int) function fgsl_linalg_symmtd_decomp (
    type(fgsl_matrix), intent(inout) a,
    type(fgsl_vector), intent(inout) tau )
```

49.33.1.167 fgsl_linalg_symmtd_unpack()

```
integer(fgsl_int) function fgsl_linalg_symmtd_unpack (
    type(fgsl_matrix), intent(in) a,
    type(fgsl_vector), intent(in) tau,
    type(fgsl_matrix), intent(inout) q,
    type(fgsl_vector), intent(inout) diag,
    type(fgsl_vector), intent(inout) subdiag )
```

49.33.1.168 fgsl_linalg_symmtd_unpack_t()

```
integer(fgsl_int) function fgsl_linalg_symmtd_unpack_t (
    type(fgsl_matrix), intent(in) a,
    type(fgsl_vector), intent(inout) diag,
    type(fgsl_vector), intent(inout) subdiag )
```

49.33.1.169 fgsl_linalg_tri_invert()

```
integer(fgsl_int) function fgsl_linalg_tri_invert (
    integer(fgsl_int), intent(in) uplo,
    integer(fgsl_int), intent(in) diag,
    type(fgsl_matrix), intent(inout) t )
```

49.33.1.170 fgsl_linalg_tri_lower_invert()

```
integer(fgsl_int) function fgsl_linalg_tri_lower_invert (
    type(fgsl_matrix), intent(inout) t )
```

49.33.1.171 fgsl_linalg_tri_lower_rcond()

```
integer(fgsl_int) function fgsl_linalg_tri_lower_rcond (
    type(fgsl_matrix), intent(inout) t,
    real(fgsl_double), intent(inout) rcond,
    type(fgsl_vector), intent(inout) work )
```

49.33.1.172 fgsl_linalg_tri_lower_unit_invert()

```
integer(fgsl_int) function fgsl_linalg_tri_lower_unit_invert (
    type(fgsl_matrix), intent(inout) t )
```

49.33.1.173 fgsl_linalg_tri_ltl()

```
integer(fgsl_int) function fgsl_linalg_tri_ltl (
    type(fgsl_matrix), intent(inout) l )
```

49.33.1.174 fgsl_linalg_tri_rcond()

```
integer(fgsl_int) function fgsl_linalg_tri_rcond (  
    integer(fgsl_int), intent(in) uplo,  
    type(fgsl_matrix), intent(in) a,  
    real(fgsl_double), intent(inout) rcond,  
    type(fgsl_vector), intent(inout) work )
```

49.33.1.175 fgsl_linalg_tri_ul()

```
integer(fgsl_int) function fgsl_linalg_tri_ul (  
    type(fgsl_matrix), intent(inout) lu )
```

49.33.1.176 fgsl_linalg_tri_upper_invert()

```
integer(fgsl_int) function fgsl_linalg_tri_upper_invert (  
    type(fgsl_matrix), intent(inout) t )
```

49.33.1.177 fgsl_linalg_tri_upper_rcond()

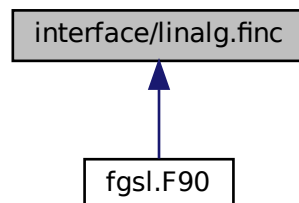
```
integer(fgsl_int) function fgsl_linalg_tri_upper_rcond (  
    type(fgsl_matrix), intent(inout) t,  
    real(fgsl_double), intent(inout) rcond,  
    type(fgsl_vector), intent(inout) work )
```

49.33.1.178 fgsl_linalg_tri_upper_unit_invert()

```
integer(fgsl_int) function fgsl_linalg_tri_upper_unit_invert (  
    type(fgsl_matrix), intent(inout) t )
```

49.34 interface/linalg.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- integer(c_int) function [gsl_linalg_lu_decomp](#) (a, p, signum)
- integer(c_int) function [gsl_linalg_complex_lu_decomp](#) (a, p, signum)
- integer(c_int) function [gsl_linalg_lu_solve](#) (lu, p, b, x)
- integer(c_int) function [gsl_linalg_complex_lu_solve](#) (lu, p, b, x)
- integer(c_int) function [gsl_linalg_lu_svx](#) (lu, p, x)
- integer(c_int) function [gsl_linalg_complex_lu_svx](#) (lu, p, x)
- integer(c_int) function [gsl_linalg_lu_refine](#) (a, lu, p, b, x, residual)
- integer(c_int) function [gsl_linalg_complex_lu_refine](#) (a, lu, p, b, x, residual)
- integer(c_int) function [gsl_linalg_lu_invert](#) (lu, p, inv)
- integer(c_int) function [gsl_linalg_complex_lu_invert](#) (lu, p, inv)
- integer(c_int) function [gsl_linalg_lu_invx](#) (lu, p)
- integer(c_int) function [gsl_linalg_complex_lu_invx](#) (lu, p)
- real(c_double) function [gsl_linalg_lu_det](#) (lu, signum)
- type(gsl_complex) function [gsl_linalg_complex_lu_det](#) (lu, signum)
- real(c_double) function [gsl_linalg_lu_ldet](#) (lu)
- real(c_double) function [gsl_linalg_complex_lu_ldet](#) (lu)
- integer(c_int) function [gsl_linalg_lu_sgndet](#) (lu, signum)
- type(gsl_complex) function [gsl_linalg_complex_lu_sgndet](#) (lu, signum)
- integer(c_int) function [gsl_linalg_qr_decomp](#) (a, tau)
- integer(c_int) function [gsl_linalg_complex_qr_decomp](#) (a, tau)
- integer(c_int) function [gsl_linalg_qr_decomp_r](#) (a, t)
- integer(c_int) function [gsl_linalg_complex_qr_decomp_r](#) (a, t)
- integer(c_int) function [gsl_linalg_qr_solve](#) (qr, tau, b, x)
- integer(c_int) function [gsl_linalg_complex_qr_solve](#) (qr, tau, b, x)
- integer(c_int) function [gsl_linalg_qr_solve_r](#) (qr, t, b, x)
- integer(c_int) function [gsl_linalg_complex_qr_solve_r](#) (qr, t, b, x)
- integer(c_int) function [gsl_linalg_qr_svx](#) (qr, tau, x)
- integer(c_int) function [gsl_linalg_complex_qr_svx](#) (qr, tau, x)
- integer(c_int) function [gsl_linalg_qr_issolve](#) (qr, tau, b, x, residual)
- integer(c_int) function [gsl_linalg_complex_qr_issolve](#) (qr, tau, b, x, residual)
- integer(c_int) function [gsl_linalg_qr_issolve_r](#) (qr, t, b, x, work)
- integer(c_int) function [gsl_linalg_complex_qr_issolve_r](#) (qr, t, b, x, work)
- integer(c_int) function [gsl_linalg_qr_qtvec](#) (qr, tau, v)
- integer(c_int) function [gsl_linalg_complex_qr_qhvec](#) (qr, tau, v)
- integer(c_int) function [gsl_linalg_qr_qtvec_r](#) (qr, t, v, work)
- integer(c_int) function [gsl_linalg_complex_qr_qhvec_r](#) (qr, t, v, work)
- integer(c_int) function [gsl_linalg_qr_qvec](#) (qr, tau, v)
- integer(c_int) function [gsl_linalg_complex_qr_qvec](#) (qr, tau, v)
- integer(c_int) function [gsl_linalg_qr_qtmat](#) (qr, tau, a)
- integer(c_int) function [gsl_linalg_qr_qtmat_r](#) (qr, t, a, work)
- integer(c_int) function [gsl_linalg_qr_rsolve](#) (qr, b, x)
- integer(c_int) function [gsl_linalg_qr_rsvx](#) (qr, x)
- integer(c_int) function [gsl_linalg_qr_unpack](#) (qr, tau, q, r)
- integer(c_int) function [gsl_linalg_qr_unpack_r](#) (qr, t, q, r)
- integer(c_int) function [gsl_linalg_complex_qr_unpack_r](#) (qr, t, q, r)
- integer(c_int) function [gsl_linalg_qr_qrsolve](#) (q, r, b, x)
- integer(c_int) function [gsl_linalg_qr_update](#) (q, r, w, v)
- integer(c_int) function [gsl_linalg_r_solve](#) (r, b, x)
- integer(c_int) function [gsl_linalg_r_svx](#) (r, x)
- integer(c_int) function [gsl_linalg_qr_ur_decomp](#) (u, a, t)
- integer(c_int) function [gsl_linalg_qr_uu_decomp](#) (u1, u2, t)
- integer(c_int) function [gsl_linalg_qr_uu_issolve](#) (r, y, t, b, x, work)
- integer(c_int) function [gsl_linalg_qr_uu_qtvec](#) (y, t, b, work)

- integer(c_int) function [gsl_linalg_qr_uz_decomp](#) (u, a, t)
- integer(c_int) function [gsl_linalg_qr_ud_decomp](#) (u, d, y, t)
- integer(c_int) function [gsl_linalg_qr_ud_issolve](#) (r, y, t, b, x, work)
- integer(c_int) function [gsl_linalg_qrpt_decomp](#) (a, tau, p, signum, norm)
- integer(c_int) function [gsl_linalg_qrpt_decomp2](#) (a, q, r, tau, p, signum, norm)
- integer(c_int) function [gsl_linalg_qrpt_solve](#) (qr, tau, p, b, x)
- integer(c_int) function [gsl_linalg_qrpt_svx](#) (qr, tau, p, x)
- integer(c_int) function [gsl_linalg_qrpt_issolve](#) (qr, tau, p, b, x, r)
- integer(c_int) function [gsl_linalg_qrpt_issolve2](#) (qr, tau, p, b, rank, x, r)
- integer(c_int) function [gsl_linalg_qrpt_qrsolve](#) (q, r, p, b, x)
- integer(c_int) function [gsl_linalg_qrpt_update](#) (q, r, p, w, v)
- integer(c_int) function [gsl_linalg_qrpt_resolve](#) (qr, p, b, x)
- integer(c_int) function [gsl_linalg_qrpt_rsvx](#) (qr, p, x)
- integer(c_size_t) function [gsl_linalg_qrpt_rank](#) (qr, tol)
- integer(c_int) function [gsl_linalg_qrpt_rcond](#) (qr, rcond, wk)
- integer(c_int) function [gsl_linalg_lq_decomp](#) (a, tau)
- integer(c_int) function [gsl_linalg_lq_issolve](#) (lq, tau, b, x, residual)
- integer(c_int) function [gsl_linalg_lq_unpack](#) (lq, tau, q, l)
- integer(c_int) function [gsl_linalg_lq_qtvec](#) (lq, tau, v)
- integer(c_int) function [gsl_linalg_ql_decomp](#) (a, tau)
- integer(c_int) function [gsl_linalg_ql_unpack](#) (ql, tau, q, l)
- integer(c_int) function [gsl_linalg_cod_decomp](#) (a, tau_q, tau_z, p, rank, work)
- integer(c_int) function [gsl_linalg_cod_decomp_e](#) (a, tau_q, tau_z, p, tol, rank, work)
- integer(c_int) function [gsl_linalg_cod_issolve](#) (qrzt, tau_q, tau_z, p, rank, b, x, residual)
- integer(c_int) function [gsl_linalg_cod_issolve2](#) (lambda, qrzt, tau_q, tau_z, p, rank, b, x, residual, s, work)
- integer(c_int) function [gsl_linalg_cod_unpack](#) (qrzt, tau_q, tau_z, p, rank, q, r, z)
- integer(c_int) function [gsl_linalg_cod_matz](#) (qrzt, tau_z, rank, a, work)
- integer(c_int) function [gsl_linalg_sv_decomp](#) (a, v, s, work)
- integer(c_int) function [gsl_linalg_sv_decomp_mod](#) (a, x, v, s, work)
- integer(c_int) function [gsl_linalg_sv_decomp_jacobi](#) (a, v, s)
- integer(c_int) function [gsl_linalg_sv_solve](#) (u, v, s, b, x)
- integer(c_int) function [gsl_linalg_sv_leverage](#) (u, h)
- integer(c_int) function [gsl_linalg_cholesky_decomp1](#) (a)
- integer(c_int) function [gsl_linalg_cholesky_decomp](#) (a)
- integer(c_int) function [gsl_linalg_complex_cholesky_decomp](#) (a)
- integer(c_int) function [gsl_linalg_cholesky_solve](#) (chol, b, x)
- integer(c_int) function [gsl_linalg_complex_cholesky_solve](#) (chol, b, x)
- integer(c_int) function [gsl_linalg_cholesky_svx](#) (chol, x)
- integer(c_int) function [gsl_linalg_complex_cholesky_svx](#) (chol, x)
- integer(c_int) function [gsl_linalg_cholesky_invert](#) (chol)
- integer(c_int) function [gsl_linalg_complex_cholesky_invert](#) (chol)
- integer(c_int) function [gsl_linalg_cholesky_decomp2](#) (a, s)
- integer(c_int) function [gsl_linalg_cholesky_solve2](#) (chol, s, b, x)
- integer(c_int) function [gsl_linalg_cholesky_svx2](#) (chol, s, x)
- integer(c_int) function [gsl_linalg_cholesky_scale](#) (a, s)
- integer(c_int) function [gsl_linalg_cholesky_scale_apply](#) (a, s)
- integer(c_int) function [gsl_linalg_cholesky_rcond](#) (chol, rcond, work)
- integer(c_int) function [gsl_linalg_pcholesky_decomp](#) (a, p)
- integer(c_int) function [gsl_linalg_pcholesky_solve](#) (ldlt, p, b, x)
- integer(c_int) function [gsl_linalg_pcholesky_svx](#) (ldlt, p, x)
- integer(c_int) function [gsl_linalg_pcholesky_invert](#) (ldlt, p, ainv)
- integer(c_int) function [gsl_linalg_pcholesky_decomp2](#) (a, p, s)
- integer(c_int) function [gsl_linalg_pcholesky_solve2](#) (ldlt, p, s, b, x)
- integer(c_int) function [gsl_linalg_pcholesky_svx2](#) (ldlt, p, s, x)
- integer(c_int) function [gsl_linalg_pcholesky_rcond](#) (ldlt, p, rcond, work)

- integer(c_int) function [gsl_linalg_mcholesky_decomp](#) (a, p, e)
- integer(c_int) function [gsl_linalg_mcholesky_solve](#) (ldlt, p, b, x)
- integer(c_int) function [gsl_linalg_mcholesky_svx](#) (ldlt, p, x)
- integer(c_int) function [gsl_linalg_mcholesky_invert](#) (ldlt, p, ainvt)
- integer(c_int) function [gsl_linalg_mcholesky_rcond](#) (ldlt, p, rcond, work)
- integer(c_int) function [gsl_linalg_ldlt_decomp](#) (a)
- integer(c_int) function [gsl_linalg_ldlt_solve](#) (ldlt, b, x)
- integer(c_int) function [gsl_linalg_ldlt_svx](#) (ldlt, x)
- integer(c_int) function [gsl_linalg_ldlt_rcond](#) (ldlt, rcond, w)
- integer(c_int) function [gsl_linalg_symmtd_decomp](#) (a, tau)
- integer(c_int) function [gsl_linalg_symmtd_unpack](#) (a, tau, q, diag, subdiag)
- integer(c_int) function [gsl_linalg_symmtd_unpack_t](#) (a, diag, subdiag)
- integer(c_int) function [gsl_linalg_hermttd_decomp](#) (a, tau)
- integer(c_int) function [gsl_linalg_hermttd_unpack](#) (a, tau, q, diag, subdiag)
- integer(c_int) function [gsl_linalg_hermttd_unpack_t](#) (a, diag, subdiag)
- integer(c_int) function [gsl_linalg_hessenberg_decomp](#) (a, tau)
- integer(c_int) function [gsl_linalg_hessenberg_unpack](#) (h, tau, u)
- integer(c_int) function [gsl_linalg_hessenberg_unpack_accum](#) (h, tau, v)
- integer(c_int) function [gsl_linalg_hessenberg_set_zero](#) (h)
- integer(c_int) function [gsl_linalg_hesstri_decomp](#) (a, b, u, v, work)
- integer(c_int) function [gsl_linalg_bidiag_decomp](#) (a, tau_u, tau_v)
- integer(c_int) function [gsl_linalg_bidiag_unpack](#) (a, tau_u, u, tau_v, v, diag, superdiag)
- integer(c_int) function [gsl_linalg_bidiag_unpack2](#) (a, tau_u, tau_v, v)
- integer(c_int) function [gsl_linalg_bidiag_unpack_b](#) (a, diag, superdiag)
- real(c_double) function [gsl_linalg_householder_transform](#) (v)
- type(gsl_complex) function [gsl_linalg_complex_householder_transform](#) (v)
- integer(c_int) function [gsl_linalg_householder_hm](#) (tau, v, a)
- integer(c_int) function [gsl_linalg_complex_householder_hm](#) (tau, v, a)
- integer(c_int) function [gsl_linalg_householder_mh](#) (tau, v, a)
- integer(c_int) function [gsl_linalg_complex_householder_mh](#) (tau, v, a)
- integer(c_int) function [gsl_linalg_householder_hv](#) (tau, v, w)
- integer(c_int) function [gsl_linalg_complex_householder_hv](#) (tau, v, w)
- integer(c_int) function [gsl_linalg_hh_solve](#) (a, b, x)
- integer(c_int) function [gsl_linalg_hh_svx](#) (a, x)
- integer(c_int) function [gsl_linalg_solve_tridiag](#) (diag, e, f, b, x)
- integer(c_int) function [gsl_linalg_solve_symm_tridiag](#) (diag, e, b, x)
- integer(c_int) function [gsl_linalg_solve_cyc_tridiag](#) (diag, e, f, b, x)
- integer(c_int) function [gsl_linalg_solve_symm_cyc_tridiag](#) (diag, e, b, x)
- integer(c_int) function [gsl_linalg_qr_matq](#) (QR, tau, A)
- subroutine [gsl_linalg_givens](#) (a, b, c, s)
- subroutine [gsl_linalg_givens_gv](#) (v, i, j, c, s)
- integer(c_int) function [gsl_linalg_tri_invert](#) (uplo, diag, t)
- integer(c_int) function [gsl_linalg_complex_tri_invert](#) (uplo, diag, t)
- integer(c_int) function [gsl_linalg_tri_ltl](#) (l)
- integer(c_int) function [gsl_linalg_complex_tri_lhl](#) (l)
- integer(c_int) function [gsl_linalg_tri_ul](#) (lu)
- integer(c_int) function [gsl_linalg_complex_tri_ul](#) (lu)
- integer(c_int) function [gsl_linalg_tri_rcond](#) (uplo, a, rcond, work)
- integer(c_int) function [gsl_linalg_tri_upper_invert](#) (t)
- integer(c_int) function [gsl_linalg_tri_lower_invert](#) (t)
- integer(c_int) function [gsl_linalg_tri_upper_unit_invert](#) (t)
- integer(c_int) function [gsl_linalg_tri_lower_unit_invert](#) (t)
- integer(c_int) function [gsl_linalg_tri_upper_rcond](#) (t, rcond, work)
- integer(c_int) function [gsl_linalg_tri_lower_rcond](#) (t, rcond, work)
- integer(c_int) function [gsl_linalg_cholesky_band_decomp](#) (a)

- integer(c_int) function [gsl_linalg_cholesky_band_solve](#) (llt, b, x)
- integer(c_int) function [gsl_linalg_cholesky_band_solve](#) (llt, b, x)
- integer(c_int) function [gsl_linalg_cholesky_band_svx](#) (llt, x)
- integer(c_int) function [gsl_linalg_cholesky_band_svxm](#) (llt, x)
- integer(c_int) function [gsl_linalg_cholesky_band_invert](#) (llt, ainv)
- integer(c_int) function [gsl_linalg_cholesky_band_unpack](#) (llt, l)
- integer(c_int) function [gsl_linalg_cholesky_band_scale](#) (a, s)
- integer(c_int) function [gsl_linalg_cholesky_band_scale_apply](#) (a, s)
- integer(c_int) function [gsl_linalg_cholesky_band_rcond](#) (llt, rcond, w)
- integer(c_int) function [gsl_linalg_ldlt_band_decomp](#) (a)
- integer(c_int) function [gsl_linalg_ldlt_band_solve](#) (ldlt, b, x)
- integer(c_int) function [gsl_linalg_ldlt_band_svx](#) (ldlt, x)
- integer(c_int) function [gsl_linalg_ldlt_band_unpack](#) (ldlt, l, d)
- integer(c_int) function [gsl_linalg_ldlt_band_rcond](#) (ldlt, rcond, w)
- integer(c_int) function [gsl_linalg_balance_matrix](#) (a, d)

49.34.1 Function/Subroutine Documentation

49.34.1.1 [gsl_linalg_balance_matrix\(\)](#)

```
integer(c_int) function gsl_linalg_balance_matrix (
    type(c_ptr), value a,
    type(c_ptr), value d )
```

49.34.1.2 [gsl_linalg_bidiag_decomp\(\)](#)

```
integer(c_int) function gsl_linalg_bidiag_decomp (
    type(c_ptr), value a,
    type(c_ptr), value tau_u,
    type(c_ptr), value tau_v )
```

49.34.1.3 [gsl_linalg_bidiag_unpack\(\)](#)

```
integer(c_int) function gsl_linalg_bidiag_unpack (
    type(c_ptr), value a,
    type(c_ptr), value tau_u,
    type(c_ptr), value u,
    type(c_ptr), value tau_v,
    type(c_ptr), value v,
    type(c_ptr), value diag,
    type(c_ptr), value superdiag )
```

49.34.1.4 `gsl_linalg_bidiag_unpack2()`

```
integer(c_int) function gsl_linalg_bidiag_unpack2 (
    type(c_ptr), value a,
    type(c_ptr), value tau_u,
    type(c_ptr), value tau_v,
    type(c_ptr), value v )
```

49.34.1.5 `gsl_linalg_bidiag_unpack_b()`

```
integer(c_int) function gsl_linalg_bidiag_unpack_b (
    type(c_ptr), value a,
    type(c_ptr), value diag,
    type(c_ptr), value superdiag )
```

49.34.1.6 `gsl_linalg_cholesky_band_decomp()`

```
integer(c_int) function gsl_linalg_cholesky_band_decomp (
    type(c_ptr), value a )
```

49.34.1.7 `gsl_linalg_cholesky_band_invert()`

```
integer(c_int) function gsl_linalg_cholesky_band_invert (
    type(c_ptr), value llt,
    type(c_ptr), value ainv )
```

49.34.1.8 `gsl_linalg_cholesky_band_rcond()`

```
integer(c_int) function gsl_linalg_cholesky_band_rcond (
    type(c_ptr), value llt,
    real(c_double) rcond,
    type(c_ptr), value w )
```

49.34.1.9 `gsl_linalg_cholesky_band_scale()`

```
integer(c_int) function gsl_linalg_cholesky_band_scale (
    type(c_ptr), value a,
    type(c_ptr), value s )
```


49.34.1.10 gsl_linalg_cholesky_band_scale_apply()

```
integer(c_int) function gsl_linalg_cholesky_band_scale_apply (  
    type(c_ptr), value a,  
    type(c_ptr), value s )
```

49.34.1.11 gsl_linalg_cholesky_band_solve()

```
integer(c_int) function gsl_linalg_cholesky_band_solve (  
    type(c_ptr), value llt,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.12 gsl_linalg_cholesky_band_solve()

```
integer(c_int) function gsl_linalg_cholesky_band_solve (  
    type(c_ptr), value llt,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.13 gsl_linalg_cholesky_band_svx()

```
integer(c_int) function gsl_linalg_cholesky_band_svx (  
    type(c_ptr), value llt,  
    type(c_ptr), value x )
```

49.34.1.14 gsl_linalg_cholesky_band_svxm()

```
integer(c_int) function gsl_linalg_cholesky_band_svxm (  
    type(c_ptr), value llt,  
    type(c_ptr), value x )
```

49.34.1.15 gsl_linalg_cholesky_band_unpack()

```
integer(c_int) function gsl_linalg_cholesky_band_unpack (  
    type(c_ptr), value llt,  
    type(c_ptr), value l )
```

49.34.1.16 gsl_linalg_cholesky_decomp()

```
integer(c_int) function gsl_linalg_cholesky_decomp (  
    type(c_ptr), value a )
```

49.34.1.17 gsl_linalg_cholesky_decomp1()

```
integer(c_int) function gsl_linalg_cholesky_decomp1 (  
    type(c_ptr), value a )
```

49.34.1.18 gsl_linalg_cholesky_decomp2()

```
integer(c_int) function gsl_linalg_cholesky_decomp2 (  
    type(c_ptr), value a,  
    type(c_ptr), value s )
```

49.34.1.19 gsl_linalg_cholesky_invert()

```
integer(c_int) function gsl_linalg_cholesky_invert (  
    type(c_ptr), value chol )
```

49.34.1.20 gsl_linalg_cholesky_rcond()

```
integer(c_int) function gsl_linalg_cholesky_rcond (  
    type(c_ptr), value chol,  
    real(c_double), intent(inout) rcond,  
    type(c_ptr), value work )
```

49.34.1.21 gsl_linalg_cholesky_scale()

```
integer(c_int) function gsl_linalg_cholesky_scale (  
    type(c_ptr), value a,  
    type(c_ptr), value s )
```

49.34.1.22 gsl_linalg_cholesky_scale_apply()

```
integer(c_int) function gsl_linalg_cholesky_scale_apply (  
    type(c_ptr), value a,  
    type(c_ptr), value s )
```

49.34.1.23 gsl_linalg_cholesky_solve()

```
integer(c_int) function gsl_linalg_cholesky_solve (  
    type(c_ptr), value chol,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.24 gsl_linalg_cholesky_solve2()

```
integer(c_int) function gsl_linalg_cholesky_solve2 (  
    type(c_ptr), value chol,  
    type(c_ptr), value s,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.25 gsl_linalg_cholesky_svx()

```
integer(c_int) function gsl_linalg_cholesky_svx (  
    type(c_ptr), value chol,  
    type(c_ptr), value x )
```

49.34.1.26 gsl_linalg_cholesky_svx2()

```
integer(c_int) function gsl_linalg_cholesky_svx2 (  
    type(c_ptr), value chol,  
    type(c_ptr), value s,  
    type(c_ptr), value x )
```

49.34.1.27 `gsl_linalg_cod_decomp()`

```
integer(c_int) function gsl_linalg_cod_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value tau_q,  
    type(c_ptr), value tau_z,  
    type(c_ptr), value p,  
    integer(c_size_t) rank,  
    type(c_ptr), value work )
```

49.34.1.28 `gsl_linalg_cod_decomp_e()`

```
integer(c_int) function gsl_linalg_cod_decomp_e (  
    type(c_ptr), value a,  
    type(c_ptr), value tau_q,  
    type(c_ptr), value tau_z,  
    type(c_ptr), value p,  
    real(c_double), value tol,  
    integer(c_size_t) rank,  
    type(c_ptr), value work )
```

49.34.1.29 `gsl_linalg_cod_issolve()`

```
integer(c_int) function gsl_linalg_cod_issolve (  
    type(c_ptr), value qrzt,  
    type(c_ptr), value tau_q,  
    type(c_ptr), value tau_z,  
    type(c_ptr), value p,  
    integer(c_size_t), value rank,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value residual )
```

49.34.1.30 `gsl_linalg_cod_issolve2()`

```
integer(c_int) function gsl_linalg_cod_issolve2 (  
    real(c_double), value lambda,  
    type(c_ptr), value qrzt,  
    type(c_ptr), value tau_q,  
    type(c_ptr), value tau_z,  
    type(c_ptr), value p,  
    integer(c_size_t), value rank,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value residual,  
    type(c_ptr), value s,  
    type(c_ptr), value work )
```

49.34.1.31 gsl_linalg_cod_matz()

```
integer(c_int) function gsl_linalg_cod_matz (  
    type(c_ptr), value qrzt,  
    type(c_ptr), value tau_z,  
    integer(c_size_t), value rank,  
    type(c_ptr), value a,  
    type(c_ptr), value work )
```

49.34.1.32 gsl_linalg_cod_unpack()

```
integer(c_int) function gsl_linalg_cod_unpack (  
    type(c_ptr), value qrzt,  
    type(c_ptr), value tau_q,  
    type(c_ptr), value tau_z,  
    type(c_ptr), value p,  
    integer(c_size_t), value rank,  
    type(c_ptr), value q,  
    type(c_ptr), value r,  
    type(c_ptr), value z )
```

49.34.1.33 gsl_linalg_complex_cholesky_decomp()

```
integer(c_int) function gsl_linalg_complex_cholesky_decomp (  
    type(c_ptr), value a )
```

49.34.1.34 gsl_linalg_complex_cholesky_invert()

```
integer(c_int) function gsl_linalg_complex_cholesky_invert (  
    type(c_ptr), value chol )
```

49.34.1.35 gsl_linalg_complex_cholesky_solve()

```
integer(c_int) function gsl_linalg_complex_cholesky_solve (  
    type(c_ptr), value chol,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.36 gsl_linalg_complex_cholesky_svx()

```
integer(c_int) function gsl_linalg_complex_cholesky_svx (  
    type(c_ptr), value chol,  
    type(c_ptr), value x )
```

49.34.1.37 gsl_linalg_complex_householder_hm()

```
integer(c_int) function gsl_linalg_complex_householder_hm (  
    type(gsl_complex), value tau,  
    type(c_ptr), value v,  
    type(c_ptr), value a )
```

49.34.1.38 gsl_linalg_complex_householder_hv()

```
integer(c_int) function gsl_linalg_complex_householder_hv (  
    type(gsl_complex), value tau,  
    type(c_ptr), value v,  
    type(c_ptr), value w )
```

49.34.1.39 gsl_linalg_complex_householder_mh()

```
integer(c_int) function gsl_linalg_complex_householder_mh (  
    type(gsl_complex), value tau,  
    type(c_ptr), value v,  
    type(c_ptr), value a )
```

49.34.1.40 gsl_linalg_complex_householder_transform()

```
type(gsl_complex) function gsl_linalg_complex_householder_transform (  
    type(c_ptr), value v )
```

49.34.1.41 gsl_linalg_complex_lu_decomp()

```
integer(c_int) function gsl_linalg_complex_lu_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value p,  
    integer(c_int) signum )
```

49.34.1.42 gsl_linalg_complex_lu_det()

```
type(gsl_complex) function gsl_linalg_complex_lu_det (
    type(c_ptr), value lu,
    integer(c_int), value signum )
```

49.34.1.43 gsl_linalg_complex_lu_invert()

```
integer(c_int) function gsl_linalg_complex_lu_invert (
    type(c_ptr), value lu,
    type(c_ptr), value p,
    type(c_ptr), value inv )
```

49.34.1.44 gsl_linalg_complex_lu_invx()

```
integer(c_int) function gsl_linalg_complex_lu_invx (
    type(c_ptr), value lu,
    type(c_ptr), value p )
```

49.34.1.45 gsl_linalg_complex_lu_lndet()

```
real(c_double) function gsl_linalg_complex_lu_lndet (
    type(c_ptr), value lu )
```

49.34.1.46 gsl_linalg_complex_lu_refine()

```
integer(c_int) function gsl_linalg_complex_lu_refine (
    type(c_ptr), value a,
    type(c_ptr), value lu,
    type(c_ptr), value p,
    type(c_ptr), value b,
    type(c_ptr), value x,
    type(c_ptr), value residual )
```

49.34.1.47 gsl_linalg_complex_lu_sgndet()

```
type(gsl_complex) function gsl_linalg_complex_lu_sgndet (
    type(c_ptr), value lu,
    integer(c_int), value signum )
```

49.34.1.48 gsl_linalg_complex_lu_solve()

```
integer(c_int) function gsl_linalg_complex_lu_solve (  
    type(c_ptr), value lu,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.49 gsl_linalg_complex_lu_svx()

```
integer(c_int) function gsl_linalg_complex_lu_svx (  
    type(c_ptr), value lu,  
    type(c_ptr), value p,  
    type(c_ptr), value x )
```

49.34.1.50 gsl_linalg_complex_qr_decomp()

```
integer(c_int) function gsl_linalg_complex_qr_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value tau )
```

49.34.1.51 gsl_linalg_complex_qr_decomp_r()

```
integer(c_int) function gsl_linalg_complex_qr_decomp_r (  
    type(c_ptr), value a,  
    type(c_ptr), value t )
```

49.34.1.52 gsl_linalg_complex_qr_lssolve()

```
integer(c_int) function gsl_linalg_complex_qr_lssolve (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value residual )
```


49.34.1.53 gsl_linalg_complex_qr_lssolve_r()

```
integer(c_int) function gsl_linalg_complex_qr_lssolve_r (  
    type(c_ptr), value qr,  
    type(c_ptr), value t,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value work )
```

49.34.1.54 gsl_linalg_complex_qr_qhvec()

```
integer(c_int) function gsl_linalg_complex_qr_qhvec (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value v )
```

49.34.1.55 gsl_linalg_complex_qr_qhvec_r()

```
integer(c_int) function gsl_linalg_complex_qr_qhvec_r (  
    type(c_ptr), value qr,  
    type(c_ptr), value t,  
    type(c_ptr), value v,  
    type(c_ptr), value work )
```

49.34.1.56 gsl_linalg_complex_qr_qvec()

```
integer(c_int) function gsl_linalg_complex_qr_qvec (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value v )
```

49.34.1.57 gsl_linalg_complex_qr_solve()

```
integer(c_int) function gsl_linalg_complex_qr_solve (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.58 gsl_linalg_complex_qr_solve_r()

```
integer(c_int) function gsl_linalg_complex_qr_solve_r (  
    type(c_ptr), value qr,  
    type(c_ptr), value t,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.59 gsl_linalg_complex_qr_svx()

```
integer(c_int) function gsl_linalg_complex_qr_svx (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value x )
```

49.34.1.60 gsl_linalg_complex_qr_unpack_r()

```
integer(c_int) function gsl_linalg_complex_qr_unpack_r (  
    type(c_ptr), value qr,  
    type(c_ptr), value t,  
    type(c_ptr), value q,  
    type(c_ptr), value r )
```

49.34.1.61 gsl_linalg_complex_tri_invert()

```
integer(c_int) function gsl_linalg_complex_tri_invert (  
    integer(c_int), value uplo,  
    integer(c_int), value diag,  
    type(c_ptr), value t )
```

49.34.1.62 gsl_linalg_complex_tri_lhl()

```
integer(c_int) function gsl_linalg_complex_tri_lhl (  
    type(c_ptr), value l )
```

49.34.1.63 gsl_linalg_complex_tri_ul()

```
integer(c_int) function gsl_linalg_complex_tri_ul (  
    type(c_ptr), value lu )
```

49.34.1.64 gsl_linalg_givens()

```
subroutine gsl_linalg_givens (
    real(c_double), value a,
    real(c_double), value b,
    real(c_double) c,
    real(c_double) s )
```

49.34.1.65 gsl_linalg_givens_gv()

```
subroutine gsl_linalg_givens_gv (
    type(c_ptr), value v,
    integer(c_size_t), value i,
    integer(c_size_t), value j,
    real(c_double), value c,
    real(c_double), value s )
```

49.34.1.66 gsl_linalg_hermt_d_decomp()

```
integer(c_int) function gsl_linalg_hermt_d_decomp (
    type(c_ptr), value a,
    type(c_ptr), value tau )
```

49.34.1.67 gsl_linalg_hermt_d_unpack()

```
integer(c_int) function gsl_linalg_hermt_d_unpack (
    type(c_ptr), value a,
    type(c_ptr), value tau,
    type(c_ptr), value g,
    type(c_ptr), value diag,
    type(c_ptr), value subdiag )
```

49.34.1.68 gsl_linalg_hermt_d_unpack_t()

```
integer(c_int) function gsl_linalg_hermt_d_unpack_t (
    type(c_ptr), value a,
    type(c_ptr), value diag,
    type(c_ptr), value subdiag )
```

49.34.1.69 gsl_linalg_hessenberg_decomp()

```
integer(c_int) function gsl_linalg_hessenberg_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value tau )
```

49.34.1.70 gsl_linalg_hessenberg_set_zero()

```
integer(c_int) function gsl_linalg_hessenberg_set_zero (  
    type(c_ptr), value h )
```

49.34.1.71 gsl_linalg_hessenberg_unpack()

```
integer(c_int) function gsl_linalg_hessenberg_unpack (  
    type(c_ptr), value h,  
    type(c_ptr), value tau,  
    type(c_ptr), value u )
```

49.34.1.72 gsl_linalg_hessenberg_unpack_accum()

```
integer(c_int) function gsl_linalg_hessenberg_unpack_accum (  
    type(c_ptr), value h,  
    type(c_ptr), value tau,  
    type(c_ptr), value v )
```

49.34.1.73 gsl_linalg_hesstri_decomp()

```
integer(c_int) function gsl_linalg_hesstri_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value b,  
    type(c_ptr), value u,  
    type(c_ptr), value v,  
    type(c_ptr), value work )
```

49.34.1.74 gsl_linalg_hh_solve()

```
integer(c_int) function gsl_linalg_hh_solve (  
    type(c_ptr), value a,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.75 gsl_linalg_hh_svx()

```
integer(c_int) function gsl_linalg_hh_svx (  
    type(c_ptr), value a,  
    type(c_ptr), value x )
```

49.34.1.76 gsl_linalg_householder_hm()

```
integer(c_int) function gsl_linalg_householder_hm (  
    real(c_double), value tau,  
    type(c_ptr), value v,  
    type(c_ptr), value a )
```

49.34.1.77 gsl_linalg_householder_hv()

```
integer(c_int) function gsl_linalg_householder_hv (  
    real(c_double), value tau,  
    type(c_ptr), value v,  
    type(c_ptr), value w )
```

49.34.1.78 gsl_linalg_householder_mh()

```
integer(c_int) function gsl_linalg_householder_mh (  
    real(c_double), value tau,  
    type(c_ptr), value v,  
    type(c_ptr), value a )
```

49.34.1.79 gsl_linalg_householder_transform()

```
real(c_double) function gsl_linalg_householder_transform (  
    type(c_ptr), value v )
```

49.34.1.80 gsl_linalg_ldlt_band_decomp()

```
integer(c_int) function gsl_linalg_ldlt_band_decomp (  
    type(c_ptr), value a )
```

49.34.1.81 gsl_linalg_ldlt_band_rcond()

```
integer(c_int) function gsl_linalg_ldlt_band_rcond (  
    type(c_ptr), value ldlt,  
    real(c_double) rcond,  
    type(c_ptr), value w )
```

49.34.1.82 gsl_linalg_ldlt_band_solve()

```
integer(c_int) function gsl_linalg_ldlt_band_solve (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.83 gsl_linalg_ldlt_band_svx()

```
integer(c_int) function gsl_linalg_ldlt_band_svx (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value x )
```

49.34.1.84 gsl_linalg_ldlt_band_unpack()

```
integer(c_int) function gsl_linalg_ldlt_band_unpack (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value l,  
    type(c_ptr), value d )
```

49.34.1.85 gsl_linalg_ldlt_decomp()

```
integer(c_int) function gsl_linalg_ldlt_decomp (  
    type(c_ptr), value a )
```

49.34.1.86 gsl_linalg_ldlt_rcond()

```
integer(c_int) function gsl_linalg_ldlt_rcond (  
    type(c_ptr), value ldlt,  
    real(c_double) rcond,  
    type(c_ptr), value w )
```

49.34.1.87 gsl_linalg_ldlt_solve()

```
integer(c_int) function gsl_linalg_ldlt_solve (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.88 gsl_linalg_ldlt_svx()

```
integer(c_int) function gsl_linalg_ldlt_svx (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value x )
```

49.34.1.89 gsl_linalg_lq_decomp()

```
integer(c_int) function gsl_linalg_lq_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value tau )
```

49.34.1.90 gsl_linalg_lq_lassolve()

```
integer(c_int) function gsl_linalg_lq_lassolve (  
    type(c_ptr), value lq,  
    type(c_ptr), value tau,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value residual )
```

49.34.1.91 gsl_linalg_lq_qtvec()

```
integer(c_int) function gsl_linalg_lq_qtvec (  
    type(c_ptr), value lq,  
    type(c_ptr), value tau,  
    type(c_ptr), value v )
```

49.34.1.92 gsl_linalg_lq_unpack()

```
integer(c_int) function gsl_linalg_lq_unpack (
    type(c_ptr), value lq,
    type(c_ptr), value tau,
    type(c_ptr), value q,
    type(c_ptr), value l )
```

49.34.1.93 gsl_linalg_lu_decomp()

```
integer(c_int) function gsl_linalg_lu_decomp (
    type(c_ptr), value a,
    type(c_ptr), value p,
    integer(c_int) signum )
```

49.34.1.94 gsl_linalg_lu_det()

```
real(c_double) function gsl_linalg_lu_det (
    type(c_ptr), value lu,
    integer(c_int), value signum )
```

49.34.1.95 gsl_linalg_lu_invert()

```
integer(c_int) function gsl_linalg_lu_invert (
    type(c_ptr), value lu,
    type(c_ptr), value p,
    type(c_ptr), value inv )
```

49.34.1.96 gsl_linalg_lu_invx()

```
integer(c_int) function gsl_linalg_lu_invx (
    type(c_ptr), value lu,
    type(c_ptr), value p )
```

49.34.1.97 gsl_linalg_lu_lndet()

```
real(c_double) function gsl_linalg_lu_lndet (
    type(c_ptr), value lu )
```


49.34.1.98 gsl_linalg_lu_refine()

```
integer(c_int) function gsl_linalg_lu_refine (  
    type(c_ptr), value a,  
    type(c_ptr), value lu,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value residual )
```

49.34.1.99 gsl_linalg_lu_sgndet()

```
integer(c_int) function gsl_linalg_lu_sgndet (  
    type(c_ptr), value lu,  
    integer(c_int), value signum )
```

49.34.1.100 gsl_linalg_lu_solve()

```
integer(c_int) function gsl_linalg_lu_solve (  
    type(c_ptr), value lu,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.101 gsl_linalg_lu_svx()

```
integer(c_int) function gsl_linalg_lu_svx (  
    type(c_ptr), value lu,  
    type(c_ptr), value p,  
    type(c_ptr), value x )
```

49.34.1.102 gsl_linalg_mcholesky_decomp()

```
integer(c_int) function gsl_linalg_mcholesky_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value p,  
    type(c_ptr), value e )
```

49.34.1.103 gsl_linalg_mcholesky_invert()

```
integer(c_int) function gsl_linalg_mcholesky_invert (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    type(c_ptr), value ainv )
```

49.34.1.104 gsl_linalg_mcholesky_rcond()

```
integer(c_int) function gsl_linalg_mcholesky_rcond (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    real(c_double), intent(inout) rcond,  
    type(c_ptr), value work )
```

49.34.1.105 gsl_linalg_mcholesky_solve()

```
integer(c_int) function gsl_linalg_mcholesky_solve (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.106 gsl_linalg_mcholesky_svx()

```
integer(c_int) function gsl_linalg_mcholesky_svx (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    type(c_ptr), value x )
```

49.34.1.107 gsl_linalg_pcholesky_decomp()

```
integer(c_int) function gsl_linalg_pcholesky_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value p )
```

49.34.1.108 gsl_linalg_pcholesky_decomp2()

```
integer(c_int) function gsl_linalg_pcholesky_decomp2 (  
    type(c_ptr), value a,  
    type(c_ptr), value p,  
    type(c_ptr), value s )
```

49.34.1.109 gsl_linalg_pcholesky_invert()

```
integer(c_int) function gsl_linalg_pcholesky_invert (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    type(c_ptr), value ainv )
```

49.34.1.110 gsl_linalg_pcholesky_rcond()

```
integer(c_int) function gsl_linalg_pcholesky_rcond (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    real(c_double), intent(inout) rcond,  
    type(c_ptr), value work )
```

49.34.1.111 gsl_linalg_pcholesky_solve()

```
integer(c_int) function gsl_linalg_pcholesky_solve (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.112 gsl_linalg_pcholesky_solve2()

```
integer(c_int) function gsl_linalg_pcholesky_solve2 (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    type(c_ptr), value s,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.113 gsl_linalg_pcholesky_svx()

```
integer(c_int) function gsl_linalg_pcholesky_svx (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    type(c_ptr), value x )
```

49.34.1.114 gsl_linalg_pcholesky_svx2()

```
integer(c_int) function gsl_linalg_pcholesky_svx2 (  
    type(c_ptr), value ldlt,  
    type(c_ptr), value p,  
    type(c_ptr), value s,  
    type(c_ptr), value x )
```

49.34.1.115 gsl_linalg_ql_decomp()

```
integer(c_int) function gsl_linalg_ql_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value tau )
```

49.34.1.116 gsl_linalg_ql_unpack()

```
integer(c_int) function gsl_linalg_ql_unpack (  
    type(c_ptr), value ql,  
    type(c_ptr), value tau,  
    type(c_ptr), value q,  
    type(c_ptr), value l )
```

49.34.1.117 gsl_linalg_qr_decomp()

```
integer(c_int) function gsl_linalg_qr_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value tau )
```

49.34.1.118 gsl_linalg_qr_decomp_r()

```
integer(c_int) function gsl_linalg_qr_decomp_r (  
    type(c_ptr), value a,  
    type(c_ptr), value t )
```

49.34.1.119 gsl_linalg_qr_lssolve()

```
integer(c_int) function gsl_linalg_qr_lssolve (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value residual )
```

49.34.1.120 gsl_linalg_qr_lssolve_r()

```
integer(c_int) function gsl_linalg_qr_lssolve_r (  
    type(c_ptr), value qr,  
    type(c_ptr), value t,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value work )
```

49.34.1.121 gsl_linalg_qr_matq()

```
integer(c_int) function gsl_linalg_qr_matq (  
    type(c_ptr), value QR,  
    type(c_ptr), value tau,  
    type(c_ptr), value A )
```

49.34.1.122 gsl_linalg_qr_qrsolve()

```
integer(c_int) function gsl_linalg_qr_qrsolve (  
    type(c_ptr), value q,  
    type(c_ptr), value r,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.123 gsl_linalg_qr_qtmat()

```
integer(c_int) function gsl_linalg_qr_qtmat (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value a )
```

49.34.1.124 gsl_linalg_qr_qtmat_r()

```
integer(c_int) function gsl_linalg_qr_qtmat_r (  
    type(c_ptr), value qr,  
    type(c_ptr), value t,  
    type(c_ptr), value a,  
    type(c_ptr), value work )
```

49.34.1.125 gsl_linalg_qr_qtvec()

```
integer(c_int) function gsl_linalg_qr_qtvec (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value v )
```

49.34.1.126 gsl_linalg_qr_qtvec_r()

```
integer(c_int) function gsl_linalg_qr_qtvec_r (  
    type(c_ptr), value qr,  
    type(c_ptr), value t,  
    type(c_ptr), value v,  
    type(c_ptr), value work )
```

49.34.1.127 gsl_linalg_qr_qvec()

```
integer(c_int) function gsl_linalg_qr_qvec (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value v )
```

49.34.1.128 gsl_linalg_qr_rsolve()

```
integer(c_int) function gsl_linalg_qr_rsolve (  
    type(c_ptr), value qr,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.129 gsl_linalg_qr_rsvx()

```
integer(c_int) function gsl_linalg_qr_rsvx (  
    type(c_ptr), value qr,  
    type(c_ptr), value x )
```

49.34.1.130 gsl_linalg_qr_solve()

```
integer(c_int) function gsl_linalg_qr_solve (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.131 gsl_linalg_qr_solve_r()

```
integer(c_int) function gsl_linalg_qr_solve_r (  
    type(c_ptr), value qr,  
    type(c_ptr), value t,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.132 gsl_linalg_qr_svx()

```
integer(c_int) function gsl_linalg_qr_svx (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value x )
```

49.34.1.133 gsl_linalg_qr_ud_decomp()

```
integer(c_int) function gsl_linalg_qr_ud_decomp (  
    type(c_ptr), value u,  
    type(c_ptr), value d,  
    type(c_ptr), value y,  
    type(c_ptr), value t )
```

49.34.1.134 gsl_linalg_qr_ud_issolve()

```
integer(c_int) function gsl_linalg_qr_ud_issolve (  
    type(c_ptr), value r,  
    type(c_ptr), value y,  
    type(c_ptr), value t,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value work )
```

49.34.1.135 gsl_linalg_qr_unpack()

```
integer(c_int) function gsl_linalg_qr_unpack (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value q,  
    type(c_ptr), value r )
```

49.34.1.136 gsl_linalg_qr_unpack_r()

```
integer(c_int) function gsl_linalg_qr_unpack_r (  
    type(c_ptr), value qr,  
    type(c_ptr), value t,  
    type(c_ptr), value q,  
    type(c_ptr), value r )
```

49.34.1.137 gsl_linalg_qr_update()

```
integer(c_int) function gsl_linalg_qr_update (  
    type(c_ptr), value q,  
    type(c_ptr), value r,  
    type(c_ptr), value w,  
    type(c_ptr), value v )
```

49.34.1.138 gsl_linalg_qr_ur_decomp()

```
integer(c_int) function gsl_linalg_qr_ur_decomp (  
    type(c_ptr), value u,  
    type(c_ptr), value a,  
    type(c_ptr), value t )
```


49.34.1.139 gsl_linalg_qr_uu_decomp()

```
integer(c_int) function gsl_linalg_qr_uu_decomp (  
    type(c_ptr), value u1,  
    type(c_ptr), value u2,  
    type(c_ptr), value t )
```

49.34.1.140 gsl_linalg_qr_uu_lssolve()

```
integer(c_int) function gsl_linalg_qr_uu_lssolve (  
    type(c_ptr), value r,  
    type(c_ptr), value y,  
    type(c_ptr), value t,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value work )
```

49.34.1.141 gsl_linalg_qr_uu_qtvec()

```
integer(c_int) function gsl_linalg_qr_uu_qtvec (  
    type(c_ptr), value y,  
    type(c_ptr), value t,  
    type(c_ptr), value b,  
    type(c_ptr), value work )
```

49.34.1.142 gsl_linalg_qr_uz_decomp()

```
integer(c_int) function gsl_linalg_qr_uz_decomp (  
    type(c_ptr), value u,  
    type(c_ptr), value a,  
    type(c_ptr), value t )
```

49.34.1.143 gsl_linalg_qrpt_decomp()

```
integer(c_int) function gsl_linalg_qrpt_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value tau,  
    type(c_ptr), value p,  
    integer(c_int), intent(out) signum,  
    type(c_ptr), value norm )
```

49.34.1.144 gsl_linalg_qrpt_decomp2()

```
integer(c_int) function gsl_linalg_qrpt_decomp2 (  
    type(c_ptr), value a,  
    type(c_ptr), value q,  
    type(c_ptr), value r,  
    type(c_ptr), value tau,  
    type(c_ptr), value p,  
    integer(c_int), intent(out) signum,  
    type(c_ptr), value norm )
```

49.34.1.145 gsl_linalg_qrpt_lassolve()

```
integer(c_int) function gsl_linalg_qrpt_lassolve (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    type(c_ptr), value x,  
    type(c_ptr), value r )
```

49.34.1.146 gsl_linalg_qrpt_lassolve2()

```
integer(c_int) function gsl_linalg_qrpt_lassolve2 (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    integer(c_size_t), value rank,  
    type(c_ptr), value x,  
    type(c_ptr), value r )
```

49.34.1.147 gsl_linalg_qrpt_qrsolve()

```
integer(c_int) function gsl_linalg_qrpt_qrsolve (  
    type(c_ptr), value q,  
    type(c_ptr), value r,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.148 gsl_linalg_qrpt_rank()

```
integer(c_size_t) function gsl_linalg_qrpt_rank (  
    type(c_ptr), value qr,  
    real(c_double), value tol )
```

49.34.1.149 gsl_linalg_qrpt_rcond()

```
integer(c_int) function gsl_linalg_qrpt_rcond (  
    type(c_ptr), value qr,  
    real(c_double) rcond,  
    type(c_ptr), value wk )
```

49.34.1.150 gsl_linalg_qrpt_resolve()

```
integer(c_int) function gsl_linalg_qrpt_resolve (  
    type(c_ptr), value qr,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.151 gsl_linalg_qrpt_rsvx()

```
integer(c_int) function gsl_linalg_qrpt_rsvx (  
    type(c_ptr), value qr,  
    type(c_ptr), value p,  
    type(c_ptr), value x )
```

49.34.1.152 gsl_linalg_qrpt_solve()

```
integer(c_int) function gsl_linalg_qrpt_solve (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value p,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.153 gsl_linalg_qrpt_svx()

```
integer(c_int) function gsl_linalg_qrpt_svx (  
    type(c_ptr), value qr,  
    type(c_ptr), value tau,  
    type(c_ptr), value p,  
    type(c_ptr), value x )
```

49.34.1.154 gsl_linalg_qrpt_update()

```
integer(c_int) function gsl_linalg_qrpt_update (  
    type(c_ptr), value q,  
    type(c_ptr), value r,  
    type(c_ptr), value p,  
    type(c_ptr), value w,  
    type(c_ptr), value v )
```

49.34.1.155 gsl_linalg_r_solve()

```
integer(c_int) function gsl_linalg_r_solve (  
    type(c_ptr), value r,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.156 gsl_linalg_r_svx()

```
integer(c_int) function gsl_linalg_r_svx (  
    type(c_ptr), value r,  
    type(c_ptr), value x )
```

49.34.1.157 gsl_linalg_solve_cyc_tridiag()

```
integer(c_int) function gsl_linalg_solve_cyc_tridiag (  
    type(c_ptr), value diag,  
    type(c_ptr), value e,  
    type(c_ptr), value f,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.158 gsl_linalg_solve_symm_cyc_tridiag()

```
integer(c_int) function gsl_linalg_solve_symm_cyc_tridiag (  
    type(c_ptr), value diag,  
    type(c_ptr), value e,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.159 gsl_linalg_solve_symm_tridiag()

```
integer(c_int) function gsl_linalg_solve_symm_tridiag (  
    type(c_ptr), value diag,  
    type(c_ptr), value e,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.160 gsl_linalg_solve_tridiag()

```
integer(c_int) function gsl_linalg_solve_tridiag (  
    type(c_ptr), value diag,  
    type(c_ptr), value e,  
    type(c_ptr), value f,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.161 gsl_linalg_sv_decomp()

```
integer(c_int) function gsl_linalg_sv_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value v,  
    type(c_ptr), value s,  
    type(c_ptr), value work )
```

49.34.1.162 gsl_linalg_sv_decomp_jacobi()

```
integer(c_int) function gsl_linalg_sv_decomp_jacobi (  
    type(c_ptr), value a,  
    type(c_ptr), value v,  
    type(c_ptr), value s )
```

49.34.1.163 gsl_linalg_sv_decomp_mod()

```
integer(c_int) function gsl_linalg_sv_decomp_mod (  
    type(c_ptr), value a,  
    type(c_ptr), value x,  
    type(c_ptr), value v,  
    type(c_ptr), value s,  
    type(c_ptr), value work )
```

49.34.1.164 gsl_linalg_sv_leverage()

```
integer(c_int) function gsl_linalg_sv_leverage (  
    type(c_ptr), value u,  
    type(c_ptr), value h )
```

49.34.1.165 gsl_linalg_sv_solve()

```
integer(c_int) function gsl_linalg_sv_solve (  
    type(c_ptr), value u,  
    type(c_ptr), value v,  
    type(c_ptr), value s,  
    type(c_ptr), value b,  
    type(c_ptr), value x )
```

49.34.1.166 gsl_linalg_symmtd_decomp()

```
integer(c_int) function gsl_linalg_symmtd_decomp (  
    type(c_ptr), value a,  
    type(c_ptr), value tau )
```

49.34.1.167 gsl_linalg_symmtd_unpack()

```
integer(c_int) function gsl_linalg_symmtd_unpack (  
    type(c_ptr), value a,  
    type(c_ptr), value tau,  
    type(c_ptr), value q,  
    type(c_ptr), value diag,  
    type(c_ptr), value subdiag )
```

49.34.1.168 gsl_linalg_symmtd_unpack_t()

```
integer(c_int) function gsl_linalg_symmtd_unpack_t (
    type(c_ptr), value a,
    type(c_ptr), value diag,
    type(c_ptr), value subdiag )
```

49.34.1.169 gsl_linalg_tri_invert()

```
integer(c_int) function gsl_linalg_tri_invert (
    integer(c_int), value uplo,
    integer(c_int), value diag,
    type(c_ptr), value t )
```

49.34.1.170 gsl_linalg_tri_lower_invert()

```
integer(c_int) function gsl_linalg_tri_lower_invert (
    type(c_ptr), value t )
```

49.34.1.171 gsl_linalg_tri_lower_rcond()

```
integer(c_int) function gsl_linalg_tri_lower_rcond (
    type(c_ptr), value t,
    real(c_double) rcond,
    type(c_ptr), value work )
```

49.34.1.172 gsl_linalg_tri_lower_unit_invert()

```
integer(c_int) function gsl_linalg_tri_lower_unit_invert (
    type(c_ptr), value t )
```

49.34.1.173 gsl_linalg_tri_ltl()

```
integer(c_int) function gsl_linalg_tri_ltl (
    type(c_ptr), value l )
```

49.34.1.174 gsl_linalg_tri_rcond()

```
integer(c_int) function gsl_linalg_tri_rcond (  
    integer(c_int), value uplo,  
    type(c_ptr), value a,  
    real(c_double), intent(inout) rcond,  
    type(c_ptr), value work )
```

49.34.1.175 gsl_linalg_tri_ul()

```
integer(c_int) function gsl_linalg_tri_ul (  
    type(c_ptr), value lu )
```

49.34.1.176 gsl_linalg_tri_upper_invert()

```
integer(c_int) function gsl_linalg_tri_upper_invert (  
    type(c_ptr), value t )
```

49.34.1.177 gsl_linalg_tri_upper_rcond()

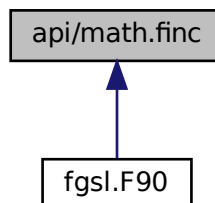
```
integer(c_int) function gsl_linalg_tri_upper_rcond (  
    type(c_ptr), value t,  
    real(c_double) rcond,  
    type(c_ptr), value work )
```

49.34.1.178 gsl_linalg_tri_upper_unit_invert()

```
integer(c_int) function gsl_linalg_tri_upper_unit_invert (  
    type(c_ptr), value t )
```

49.35 api/math.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- integer(fgsl_int) function [fgsl_isnan](#) (x)
- integer(fgsl_int) function [fgsl_isinf](#) (x)
- integer(fgsl_int) function [fgsl_finite](#) (x)
- real(fgsl_double) function [fgsl_log1p](#) (x)
- real(fgsl_double) function [fgsl_expm1](#) (x)
- real(fgsl_double) function [fgsl_acosh](#) (x)
- real(fgsl_double) function [fgsl_asinh](#) (x)
- real(fgsl_double) function [fgsl_atanh](#) (x)
- real(fgsl_double) function [fgsl_ldexp](#) (x, e)
- real(fgsl_double) function [fgsl_frexp](#) (x, e)
- integer(fgsl_int) function [fgsl_fcmp](#) (x, y, eps)
- type(fgsl_function) function [fgsl_function_init](#) (func, params)
Constructor for an FGSL function type.
- type(fgsl_function_fdf) function [fgsl_function_fdf_init](#) (f, df, fdf, params)
Constructor for an FGSL function type including a derivative.
- subroutine [fgsl_function_free](#) (sfunc)
Free resources associated with a FGSL function object.
- subroutine [fgsl_function_fdf_free](#) (sfunc)
Free resources associated with a FGSL function with derivative object.
- real(fgsl_double) function [fgsl_fn_eval](#) (sfunc, x)
Evaluate a function value for a FGSL function object.
- real(fgsl_double) function [fgsl_fn_fdf_eval_f](#) (sfunc, x)
Evaluate a function value for a FGSL function with derivative object.
- real(fgsl_double) function [fgsl_fn_fdf_eval_df](#) (sfunc, x)
Evaluate a derivative value for a FGSL function with derivative object.
- subroutine [fgsl_fn_fdf_eval_f_df](#) (sfunc, x, y, dy)
Evaluate function as well as derivative value for a FGSL function with derivative object.

49.35.1 Function/Subroutine Documentation

49.35.1.1 [fgsl_acosh\(\)](#)

```
real(fgsl_double) function fgsl_acosh (
    real(fgsl_double), intent(in) x )
```

49.35.1.2 [fgsl_asinh\(\)](#)

```
real(fgsl_double) function fgsl_asinh (
    real(fgsl_double), intent(in) x )
```

49.35.1.3 fgsl_atanh()

```
real(fgsl_double) function fgsl_atanh (
    real(fgsl_double), intent(in) x )
```

49.35.1.4 fgsl_expm1()

```
real(fgsl_double) function fgsl_expm1 (
    real(fgsl_double), intent(in) x )
```

49.35.1.5 fgsl_fcmp()

```
integer(fgsl_int) function fgsl_fcmp (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    real(fgsl_double), intent(in) eps )
```

49.35.1.6 fgsl_finite()

```
integer(fgsl_int) function fgsl_finite (
    real(fgsl_double), intent(in) x )
```

49.35.1.7 fgsl_fn_eval()

```
real(fgsl_double) function fgsl_fn_eval (
    type(fgsl_function), intent(inout) sfunc,
    real(fgsl_double), intent(in) x )
```

Evaluate a function value for a FGSL function object.

Parameters

<i>sfunc</i>	- function object.
<i>x</i>	- argument value

Returns

Function value

49.35.1.8 fgsl_fn_fdf_eval_df()

```
real(fgsl_double) function fgsl_fn_fdf_eval_df (
    type(fgsl_function_fdf), intent(inout) sfunc,
    real(fgsl_double), intent(in) x )
```

Evaluate a derivative value for a FGSL function with derivative object.

Parameters

<i>sfunc</i>	- function with derivative object.
<i>x</i>	- argument value

Returns

Derivative value

49.35.1.9 fgsl_fn_fdf_eval_f()

```
real(fgsl_double) function fgsl_fn_fdf_eval_f (
    type(fgsl_function_fdf), intent(inout) sfunc,
    real(fgsl_double), intent(in) x )
```

Evaluate a function value for a FGSL function with derivative object.

Parameters

<i>sfunc</i>	- function with derivative object.
<i>x</i>	- argument value

Returns

Function value

49.35.1.10 fgsl_fn_fdf_eval_f_df()

```
subroutine fgsl_fn_fdf_eval_f_df (
    type(fgsl_function_fdf), intent(inout) sfunc,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(out) y,
    real(fgsl_double), intent(out) dy )
```

Evaluate function as well as derivative value for a FGSL function with derivative object.

Parameters

<i>sfunc</i>	- function with derivative object.
<i>x</i>	- argument value
<i>y</i>	- function value
<i>dy</i>	- derivative value

49.35.1.11 fgsl_frexp()

```
real(fgsl_double) function fgsl_frexp (
    real(fgsl_double), intent(in) x,
    integer(fgsl_int), intent(out) e )
```

49.35.1.12 fgsl_function_fdf_free()

```
subroutine fgsl_function_fdf_free (
    type(fgsl_function_fdf), intent(inout) sfunc )
```

Free resources associated with a FGSL function with derivative object.

49.35.1.13 fgsl_function_fdf_init()

```
type(fgsl_function_fdf) function fgsl_function_fdf_init (
    f,
    df,
    fdf,
    type(c_ptr), intent(in) params )
```

Constructor for an FGSL function type including a derivative.

Parameters

<i>f</i>	- interface for a double precision valued function with a parameter of arbitrary type
<i>df</i>	- interface for a function evaluating the derivative of f
<i>fdf</i>	- interface for a subroutine evaluating f as well as its derivative given an argument and a parameter.
<i>params</i>	- parameter of arbitrary type

Returns

FGSL function with derivative object.

49.35.1.14 fgsl_function_free()

```
subroutine fgsl_function_free (
    type(fgsl_function), intent(inout) sfunc )
```

Free resources associated with a FGSL function object.

49.35.1.15 fgsl_function_init()

```
type(fgsl_function) function fgsl_function_init (
    func,
    type(c_ptr), intent(in) params )
```

Constructor for an FGSL function type.

Parameters

<i>func</i>	- interface for a double precision valued function with a parameter of arbitrary type
<i>params</i>	- parameter of arbitrary type

Returns

FGSL function object.

49.35.1.16 fgsl_isinf()

```
integer(fgsl_int) function fgsl_isinf (
    real(fgsl_double), intent(in) x )
```

49.35.1.17 fgsl_isnan()

```
integer(fgsl_int) function fgsl_isnan (
    real(fgsl_double), intent(in) x )
```

49.35.1.18 fgsl_ldexp()

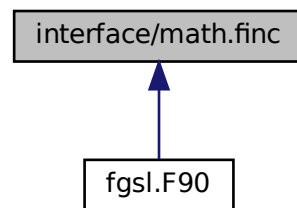
```
real(fgsl_double) function fgsl_ldexp (
    real(fgsl_double), intent(in) x,
    integer(fgsl_int), intent(in) e )
```

49.35.1.19 fgsl_log1p()

```
real(fgsl_double) function fgsl_log1p (
    real(fgsl_double), intent(in) x )
```

49.36 interface/math.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- integer(c_int) function [gsl_isnan](#) (x)
- integer(c_int) function [gsl_isinf](#) (x)
- integer(c_int) function [gsl_finite](#) (x)
- real(c_double) function [gsl_log1p](#) (x)
- real(c_double) function [gsl_expm1](#) (x)
- real(c_double) function [fgsl_hypot](#) (x, y)
- real(c_double) function [fgsl_hypot3](#) (x, y, z)
- real(c_double) function [gsl_acosh](#) (x)
- real(c_double) function [gsl_asinh](#) (x)
- real(c_double) function [gsl_atanh](#) (x)
- real(c_double) function [gsl_ldexp](#) (x, e)
- real(c_double) function [gsl_frexp](#) (x, e)
- integer(c_int) function [gsl_fcmp](#) (x, y, eps)
- type(c_ptr) function [fgsl_function_cinit](#) (func, params)
- type(c_ptr) function [fgsl_function_fdf_cinit](#) (f, df, fdf, params)
- subroutine [fgsl_function_cfree](#) (sfunc)
- subroutine [fgsl_function_fdf_cfree](#) (sfunc)
- real(c_double) function [fgsl_fn_eval_aux](#) (f, x)
- real(c_double) function [fgsl_fn_fdf_eval_f_aux](#) (f, x)
- real(c_double) function [fgsl_fn_fdf_eval_df_aux](#) (f, x)
- subroutine [fgsl_fn_fdf_eval_f_df_aux](#) (f, x, y, dy)

49.36.1 Function/Subroutine Documentation

49.36.1.1 fgsl_fn_eval_aux()

```
real(c_double) function fgsl_fn_eval_aux (
    type(c_ptr), value f,
    real(c_double), value x )
```

49.36.1.2 fgsl_fn_fdf_eval_df_aux()

```
real(c_double) function fgsl_fn_fdf_eval_df_aux (
    type(c_ptr), value f,
    real(c_double), value x )
```

49.36.1.3 fgsl_fn_fdf_eval_f_aux()

```
real(c_double) function fgsl_fn_fdf_eval_f_aux (
    type(c_ptr), value f,
    real(c_double), value x )
```

49.36.1.4 fgsl_fn_fdf_eval_f_df_aux()

```
subroutine fgsl_fn_fdf_eval_f_df_aux (
    type(c_ptr), value f,
    real(c_double), value x,
    real(c_double), intent(out) y,
    real(c_double), intent(out) dy )
```

49.36.1.5 fgsl_function_cfree()

```
subroutine fgsl_function_cfree (
    type(c_ptr), value sfunc )
```

49.36.1.6 fgsl_function_cinit()

```
type(c_ptr) function fgsl_function_cinit (
    type(c_funptr), value func,
    type(c_ptr), value params )
```

49.36.1.7 fgsl_function_fdf_cfree()

```
subroutine fgsl_function_fdf_cfree (
    type(c_ptr), value sfunc )
```

49.36.1.8 fgsl_function_fdf_cinit()

```
type(c_ptr) function fgsl_function_fdf_cinit (
    type(c_funptr), value f,
    type(c_funptr), value df,
    type(c_funptr), value fdf,
    type(c_ptr), value params )
```

49.36.1.9 fgsl_hypot()

```
real(c_double) function fgsl_hypot (
    real(c_double), value x,
    real(c_double), value y )
```

49.36.1.10 fgsl_hypot3()

```
real(c_double) function fgsl_hypot3 (
    real(c_double), value x,
    real(c_double), value y,
    real(c_double), value z )
```

49.36.1.11 gsl_acosh()

```
real(c_double) function gsl_acosh (
    real(c_double), value x )
```

49.36.1.12 gsl_asinh()

```
real(c_double) function gsl_asinh (
    real(c_double), value x )
```


49.36.1.13 gsl_atanh()

```
real(c_double) function gsl_atanh (  
    real(c_double), value x )
```

49.36.1.14 gsl_expml()

```
real(c_double) function gsl_expml (  
    real(c_double), value x )
```

49.36.1.15 gsl_fcmp()

```
integer(c_int) function gsl_fcmp (  
    real(c_double), value x,  
    real(c_double), value y,  
    real(c_double), value eps )
```

49.36.1.16 gsl_finite()

```
integer(c_int) function gsl_finite (  
    real(c_double), value x )
```

49.36.1.17 gsl_frexp()

```
real(c_double) function gsl_frexp (  
    real(c_double), value x,  
    integer(c_int), intent(out) e )
```

49.36.1.18 gsl_isinf()

```
integer(c_int) function gsl_isinf (  
    real(c_double), value x )
```

49.36.1.19 gsl_isnan()

```
integer(c_int) function gsl_isnan (
    real(c_double), value x )
```

49.36.1.20 gsl_ldexp()

```
real(c_double) function gsl_ldexp (
    real(c_double), value x,
    integer(c_int), value e )
```

49.36.1.21 gsl_log1p()

```
real(c_double) function gsl_log1p (
    real(c_double), value x )
```

49.37 api/min.finc File Reference**Functions/Subroutines**

- type(fgsl_min_fminimizer) function [fgsl_min_fminimizer_alloc](#) (t)
- subroutine [fgsl_min_fminimizer_free](#) (s)
- integer(fgsl_int) function [fgsl_min_fminimizer_set](#) (s, f, x_minimum, x_lower, x_upper)
- integer(fgsl_int) function [fgsl_min_fminimizer_set_with_values](#) (s, f, x_minimum, f_minimum, x_lower, f_lower, x_upper, f_upper)
- integer(fgsl_int) function [fgsl_min_fminimizer_iterate](#) (s)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_min_fminimizer_name](#) (s)
- real(fgsl_double) function [fgsl_min_fminimizer_x_minimum](#) (s)
- real(fgsl_double) function [fgsl_min_fminimizer_x_lower](#) (s)
- real(fgsl_double) function [fgsl_min_fminimizer_x_upper](#) (s)
- real(fgsl_double) function [fgsl_min_fminimizer_f_minimum](#) (s)
- real(fgsl_double) function [fgsl_min_fminimizer_f_lower](#) (s)
- real(fgsl_double) function [fgsl_min_fminimizer_f_upper](#) (s)
- integer(fgsl_int) function [fgsl_min_test_interval](#) (x_lower, x_upper, epsabs, epsrel)
- logical function [fgsl_min_fminimizer_status](#) (s)

49.37.1 Function/Subroutine Documentation

49.37.1.1 fgsl_min_fminimizer_alloc()

```
type(fgsl_min_fminimizer) function fgsl_min_fminimizer_alloc (
    type(fgsl_min_fminimizer_type), intent(in) t )
```

49.37.1.2 fgsl_min_fminimizer_f_lower()

```
real(fgsl_double) function fgsl_min_fminimizer_f_lower (
    type(fgsl_min_fminimizer), intent(in) s )
```

49.37.1.3 fgsl_min_fminimizer_f_minimum()

```
real(fgsl_double) function fgsl_min_fminimizer_f_minimum (
    type(fgsl_min_fminimizer), intent(in) s )
```

49.37.1.4 fgsl_min_fminimizer_f_upper()

```
real(fgsl_double) function fgsl_min_fminimizer_f_upper (
    type(fgsl_min_fminimizer), intent(in) s )
```

49.37.1.5 fgsl_min_fminimizer_free()

```
subroutine fgsl_min_fminimizer_free (
    type(fgsl_min_fminimizer), intent(inout) s )
```

49.37.1.6 fgsl_min_fminimizer_iterate()

```
integer(fgsl_int) function fgsl_min_fminimizer_iterate (
    type(fgsl_min_fminimizer), intent(in) s )
```

49.37.1.7 fgsl_min_fminimizer_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_min_fminimizer_name (
    type(fgsl_min_fminimizer), intent(in) s )
```

49.37.1.8 fgsl_min_fminimizer_set()

```
integer(fgsl_int) function fgsl_min_fminimizer_set (  
    type(fgsl_min_fminimizer), intent(inout) s,  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) x_minimum,  
    real(fgsl_double), intent(in) x_lower,  
    real(fgsl_double), intent(in) x_upper )
```

49.37.1.9 fgsl_min_fminimizer_set_with_values()

```
integer(fgsl_int) function fgsl_min_fminimizer_set_with_values (  
    type(fgsl_min_fminimizer), intent(inout) s,  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) x_minimum,  
    real(fgsl_double), intent(in) f_minimum,  
    real(fgsl_double), intent(in) x_lower,  
    real(fgsl_double), intent(in) f_lower,  
    real(fgsl_double), intent(in) x_upper,  
    real(fgsl_double), intent(in) f_upper )
```

49.37.1.10 fgsl_min_fminimizer_status()

```
logical function fgsl_min_fminimizer_status (  
    type(fgsl_min_fminimizer), intent(in) s )
```

49.37.1.11 fgsl_min_fminimizer_x_lower()

```
real(fgsl_double) function fgsl_min_fminimizer_x_lower (  
    type(fgsl_min_fminimizer), intent(in) s )
```

49.37.1.12 fgsl_min_fminimizer_x_minimum()

```
real(fgsl_double) function fgsl_min_fminimizer_x_minimum (  
    type(fgsl_min_fminimizer), intent(in) s )
```

49.37.1.13 fgsl_min_fminimizer_x_upper()

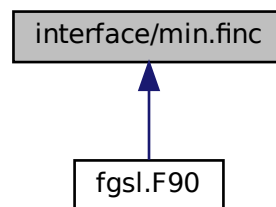
```
real(fgsl_double) function fgsl_min_fminimizer_x_upper (  
    type(fgsl_min_fminimizer), intent(in) s )
```

49.37.1.14 fgsl_min_test_interval()

```
integer(fgsl_int) function fgsl_min_test_interval (
    real(fgsl_double), intent(in) x_lower,
    real(fgsl_double), intent(in) x_upper,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel )
```

49.38 interface/min.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- type(c_ptr) function [gsl_min_fminimizer_alloc](#) (t)
- type(c_ptr) function [fgsl_aux_fminimizer_alloc](#) (it)
- subroutine [gsl_min_fminimizer_free](#) (s)
- integer(c_int) function [gsl_min_fminimizer_set](#) (s, f, x_minimum, x_lower, x_upper)
- integer(c_int) function [gsl_min_fminimizer_set_with_values](#) (s, f, x_minimum, f_minimum, x_lower, f_lower, x_upper, f_upper)
- integer(c_int) function [gsl_min_fminimizer_iterate](#) (s)
- type(c_ptr) function [gsl_min_fminimizer_name](#) (s)
- real(c_double) function [gsl_min_fminimizer_x_minimum](#) (s)
- real(c_double) function [gsl_min_fminimizer_x_lower](#) (s)
- real(c_double) function [gsl_min_fminimizer_x_upper](#) (s)
- real(c_double) function [gsl_min_fminimizer_f_minimum](#) (s)
- real(c_double) function [gsl_min_fminimizer_f_lower](#) (s)
- real(c_double) function [gsl_min_fminimizer_f_upper](#) (s)
- integer(c_int) function [gsl_min_test_interval](#) (x_lower, x_upper, epsabs, epsrel)

49.38.1 Function/Subroutine Documentation

49.38.1.1 fgsl_aux_fminimizer_alloc()

```
type(c_ptr) function fgsl_aux_fminimizer_alloc (
    integer(c_int), value it )
```

49.38.1.2 gsl_min_fminimizer_alloc()

```
type(c_ptr) function gsl_min_fminimizer_alloc (
    type(c_ptr), value t )
```

49.38.1.3 gsl_min_fminimizer_f_lower()

```
real(c_double) function gsl_min_fminimizer_f_lower (
    type(c_ptr), value s )
```

49.38.1.4 gsl_min_fminimizer_f_minimum()

```
real(c_double) function gsl_min_fminimizer_f_minimum (
    type(c_ptr), value s )
```

49.38.1.5 gsl_min_fminimizer_f_upper()

```
real(c_double) function gsl_min_fminimizer_f_upper (
    type(c_ptr), value s )
```

49.38.1.6 gsl_min_fminimizer_free()

```
subroutine gsl_min_fminimizer_free (
    type(c_ptr), value s )
```

49.38.1.7 gsl_min_fminimizer_iterate()

```
integer(c_int) function gsl_min_fminimizer_iterate (
    type(c_ptr), value s )
```

49.38.1.8 gsl_min_fminimizer_name()

```
type(c_ptr) function gsl_min_fminimizer_name (  
    type(c_ptr), value s )
```

49.38.1.9 gsl_min_fminimizer_set()

```
integer(c_int) function gsl_min_fminimizer_set (  
    type(c_ptr), value s,  
    type(c_ptr), value f,  
    real(c_double), value x_minimum,  
    real(c_double), value x_lower,  
    real(c_double), value x_upper )
```

49.38.1.10 gsl_min_fminimizer_set_with_values()

```
integer(c_int) function gsl_min_fminimizer_set_with_values (  
    type(c_ptr), value s,  
    type(c_ptr), value f,  
    real(c_double), value x_minimum,  
    real(c_double), value f_minimum,  
    real(c_double), value x_lower,  
    real(c_double), value f_lower,  
    real(c_double), value x_upper,  
    real(c_double), value f_upper )
```

49.38.1.11 gsl_min_fminimizer_x_lower()

```
real(c_double) function gsl_min_fminimizer_x_lower (  
    type(c_ptr), value s )
```

49.38.1.12 gsl_min_fminimizer_x_minimum()

```
real(c_double) function gsl_min_fminimizer_x_minimum (  
    type(c_ptr), value s )
```

49.38.1.13 gsl_min_fminimizer_x_upper()

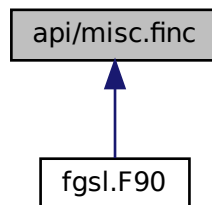
```
real(c_double) function gsl_min_fminimizer_x_upper (  
    type(c_ptr), value s )
```

49.38.1.14 gsl_min_test_interval()

```
integer(c_int) function gsl_min_test_interval (
    real(c_double), value x_lower,
    real(c_double), value x_upper,
    real(c_double), value epsabs,
    real(c_double), value epsrel )
```

49.39 api/misc.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- character(kind=fosl_char, len=fosl_strmax) function [fosl_name](#) (c_name)
C string to Fortran string conversion.
- integer(fosl_size_t) function [fosl_sizeof_double](#) (x)
size of intrinsic double precision type
- integer(fosl_size_t) function [fosl_sizeof_float](#) (x)
size of intrinsic single precision type
- integer(fosl_size_t) function [fosl_sizeof_int](#) (x)
size of intrinsic integer type
- integer(fosl_size_t) function [fosl_sizeof_long](#) (x)
size of intrinsic long integer type
- integer(fosl_size_t) function [fosl_sizeof_size_t](#) (x)
size of intrinsic size_t integer type
- integer(fosl_size_t) function [fosl_sizeof_char](#) (x)
size of intrinsic character type

49.39.1 Function/Subroutine Documentation

49.39.1.1 fgsl_name()

```
character(kind=fgsl_char, len=fgsl_strmax) function fgsl_name (  
    type(c_ptr), intent(in) c_name )
```

C string to Fortran string conversion.

49.39.1.2 fgsl_sizeof_char()

```
integer(fgsl_size_t) function fgsl_sizeof_char (  
    character(fgsl_char), intent(in) x )
```

size of intrinsic character type

49.39.1.3 fgsl_sizeof_double()

```
integer(fgsl_size_t) function fgsl_sizeof_double (  
    real(fgsl_double), intent(in) x )
```

size of intrinsic double precision type

49.39.1.4 fgsl_sizeof_float()

```
integer(fgsl_size_t) function fgsl_sizeof_float (  
    real(fgsl_float), intent(in) x )
```

size of intrinsic single precision type

49.39.1.5 fgsl_sizeof_int()

```
integer(fgsl_size_t) function fgsl_sizeof_int (  
    integer(fgsl_int), intent(in) x )
```

size of intrinsic integer type

49.39.1.6 fgsl_sizeof_long()

```
integer(fgsl_size_t) function fgsl_sizeof_long (  
    integer(fgsl_long), intent(in) x )
```

size of intrinsic long integer type

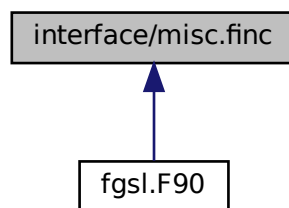
49.39.1.7 fgsl_sizeof_size_t()

```
integer(fgsl_size_t) function fgsl_sizeof_size_t (
    integer(fgsl_size_t), intent(in) x )
```

size of intrinsic size_t integer type

49.40 interface/misc.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- integer(c_size_t) function [gsl_aux_sizeof_double](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_float](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_int](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_long](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_size_t](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_char](#) ()

49.40.1 Function/Subroutine Documentation

49.40.1.1 gsl_aux_sizeof_char()

```
integer(c_size_t) function gsl_aux_sizeof_char
```

49.40.1.2 gsl_aux_sizeof_double()

```
integer(c_size_t) function gsl_aux_sizeof_double
```

49.40.1.3 gsl_aux_sizeof_float()

```
integer(c_size_t) function gsl_aux_sizeof_float
```

49.40.1.4 gsl_aux_sizeof_int()

```
integer(c_size_t) function gsl_aux_sizeof_int
```

49.40.1.5 gsl_aux_sizeof_long()

```
integer(c_size_t) function gsl_aux_sizeof_long
```

49.40.1.6 gsl_aux_sizeof_size_t()

```
integer(c_size_t) function gsl_aux_sizeof_size_t
```

49.41 api/montecarlo.finc File Reference**Functions/Subroutines**

- type(fgsl_monte_function) function [fgsl_monte_function_init](#) (func, dim, params)
- subroutine [fgsl_monte_function_free](#) (func)
- type(fgsl_monte_plain_state) function [fgsl_monte_plain_alloc](#) (dim)
- integer(fgsl_int) function [fgsl_monte_plain_init](#) (s)
- integer(fgsl_int) function [fgsl_monte_plain_integrate](#) (f, xl, xu, dim, calls, r, s, result, abserr)
- subroutine [fgsl_monte_plain_free](#) (s)
- type(fgsl_monte_miser_state) function [fgsl_monte_miser_alloc](#) (dim)
- integer(fgsl_int) function [fgsl_monte_miser_init](#) (s)
- integer(fgsl_int) function [fgsl_monte_miser_integrate](#) (f, xl, xu, dim, calls, r, s, result, abserr)
- subroutine [fgsl_monte_miser_free](#) (s)
- type(fgsl_monte_vegas_state) function [fgsl_monte_vegas_alloc](#) (dim)
- integer(fgsl_int) function [fgsl_monte_vegas_init](#) (s)
- integer(fgsl_int) function [fgsl_monte_vegas_integrate](#) (f, xl, xu, dim, calls, r, s, result, abserr)
- subroutine [fgsl_monte_vegas_free](#) (s)
- real(fgsl_double) function [fgsl_monte_vegas_chisq](#) (s)
- subroutine [fgsl_monte_vegas_runval](#) (s, result, sigma)
- logical function [fgsl_monte_function_status](#) (monte_function)
- logical function [fgsl_monte_plain_status](#) (monte_plain)
- logical function [fgsl_monte_miser_status](#) (monte_miser)
- logical function [fgsl_monte_vegas_status](#) (monte_vegas)
- subroutine [fgsl_monte_miser_setparams](#) (s, estimate_frac, min_calls, min_calls_per_bisection, alpha, dither)

Accessor routine for setting the parameters for the MISER algorithm.
- subroutine [fgsl_monte_miser_getparams](#) (s, estimate_frac, min_calls, min_calls_per_bisection, alpha, dither)

Accessor routine for reading out the parameters for the MISER algorithm.
- subroutine [fgsl_monte_vegas_setparams](#) (s, result, sigma, chisq, alpha, iterations, stage, mode, verbose, ostream)

Accessor routine for setting the parameters for the VEGAS algorithm.
- subroutine [fgsl_monte_vegas_getparams](#) (s, result, sigma, chisq, alpha, iterations, stage, mode, verbose, ostream)

Accessor routine for reading out the parameters for the VEGAS algorithm.

49.41.1 Function/Subroutine Documentation

49.41.1.1 fgsl_monte_function_free()

```
subroutine fgsl_monte_function_free (  
    type(fgsl_monte_function), intent(inout) func )
```

49.41.1.2 fgsl_monte_function_init()

```
type(fgsl_monte_function) function fgsl_monte_function_init (  
    func,  
    integer(fgsl_size_t), intent(in) dim,  
    type(c_ptr), intent(in) params )
```

49.41.1.3 fgsl_monte_function_status()

```
logical function fgsl_monte_function_status (  
    type(fgsl_monte_function), intent(in) monte_function )
```

49.41.1.4 fgsl_monte_miser_alloc()

```
type(fgsl_monte_miser_state) function fgsl_monte_miser_alloc (  
    integer(fgsl_size_t), value dim )
```

49.41.1.5 fgsl_monte_miser_free()

```
subroutine fgsl_monte_miser_free (  
    type(fgsl_monte_miser_state), intent(inout) s )
```

49.41.1.6 fgsl_monte_miser_getparams()

```

subroutine fgsl_monte_miser_getparams (
    type(fgsl_monte_miser_state), intent(in) s,
    real(fgsl_double), intent(out) estimate_frac,
    integer(fgsl_size_t), intent(out) min_calls,
    integer(fgsl_size_t), intent(out) min_calls_per_bisection,
    real(fgsl_double), intent(out) alpha,
    real(fgsl_double), intent(out) dither )

```

Accessor routine for reading out the parameters for the MISER algorithm.

49.41.1.7 fgsl_monte_miser_init()

```

integer(fgsl_int) function fgsl_monte_miser_init (
    type(fgsl_monte_miser_state), intent(in) s )

```

49.41.1.8 fgsl_monte_miser_integrate()

```

integer(fgsl_int) function fgsl_monte_miser_integrate (
    type(fgsl_monte_function), intent(in) f,
    real(fgsl_double), dimension(dim), intent(in) xl,
    real(fgsl_double), dimension(dim), intent(in) xu,
    integer(fgsl_size_t), intent(in) dim,
    integer(fgsl_size_t), intent(in) calls,
    type(fgsl_rng), intent(in) r,
    type(fgsl_monte_miser_state), intent(in) s,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )

```

49.41.1.9 fgsl_monte_miser_setparams()

```

subroutine fgsl_monte_miser_setparams (
    type(fgsl_monte_miser_state), intent(inout) s,
    real(fgsl_double), intent(in) estimate_frac,
    integer(fgsl_size_t), intent(in) min_calls,
    integer(fgsl_size_t), intent(in) min_calls_per_bisection,
    real(fgsl_double), intent(in) alpha,
    real(fgsl_double), intent(in) dither )

```

Accessor routine for setting the parameters for the MISER algorithm.

49.41.1.10 fgsl_monte_miser_status()

```
logical function fgsl_monte_miser_status (
    type(fgsl_monte_miser_state), intent(in) monte_miser )
```

49.41.1.11 fgsl_monte_plain_alloc()

```
type(fgsl_monte_plain_state) function fgsl_monte_plain_alloc (
    integer(fgsl_size_t), intent(in) dim )
```

49.41.1.12 fgsl_monte_plain_free()

```
subroutine fgsl_monte_plain_free (
    type(fgsl_monte_plain_state), intent(inout) s )
```

49.41.1.13 fgsl_monte_plain_init()

```
integer(fgsl_int) function fgsl_monte_plain_init (
    type(fgsl_monte_plain_state), intent(in) s )
```

49.41.1.14 fgsl_monte_plain_integrate()

```
integer(fgsl_int) function fgsl_monte_plain_integrate (
    type(fgsl_monte_function), intent(in) f,
    real(fgsl_double), dimension(dim), intent(in) xl,
    real(fgsl_double), dimension(dim), intent(in) xu,
    integer(fgsl_size_t), intent(in) dim,
    integer(fgsl_size_t), intent(in) calls,
    type(fgsl_rng), intent(in) r,
    type(fgsl_monte_plain_state), intent(in) s,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.41.1.15 fgsl_monte_plain_status()

```
logical function fgsl_monte_plain_status (
    type(fgsl_monte_plain_state), intent(in) monte_plain )
```

49.41.1.16 fgsl_monte_vegas_alloc()

```
type(fgsl_monte_vegas_state) function fgsl_monte_vegas_alloc (
    integer(fgsl_size_t), value dim )
```

49.41.1.17 fgsl_monte_vegas_chisq()

```
real(fgsl_double) function fgsl_monte_vegas_chisq (
    type(fgsl_monte_vegas_state), intent(in) s )
```

49.41.1.18 fgsl_monte_vegas_free()

```
subroutine fgsl_monte_vegas_free (
    type(fgsl_monte_vegas_state), intent(inout) s )
```

49.41.1.19 fgsl_monte_vegas_getparams()

```
subroutine fgsl_monte_vegas_getparams (
    type(fgsl_monte_vegas_state), intent(in) s,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) sigma,
    real(fgsl_double), intent(out) chisq,
    real(fgsl_double), intent(out) alpha,
    integer(fgsl_size_t), intent(out) iterations,
    integer(fgsl_int), intent(out) stage,
    integer(fgsl_int), intent(out) mode,
    integer(fgsl_int), intent(out) verbose,
    type(fgsl_file), intent(out) ostream )
```

Accessor routine for reading out the parameters for the VEGAS algorithm.

49.41.1.20 fgsl_monte_vegas_init()

```
integer(fgsl_int) function fgsl_monte_vegas_init (
    type(fgsl_monte_vegas_state), intent(in) s )
```

49.41.1.21 fgsl_monte_vegas_integrate()

```
integer(fgsl_int) function fgsl_monte_vegas_integrate (
    type(fgsl_monte_function), intent(in) f,
    real(fgsl_double), dimension(dim), intent(in) xl,
    real(fgsl_double), dimension(dim), intent(in) xu,
    integer(fgsl_size_t), intent(in) dim,
    integer(fgsl_size_t), intent(in) calls,
    type(fgsl_rng), intent(in) r,
    type(fgsl_monte_vegas_state), intent(in) s,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) abserr )
```

49.41.1.22 fgsl_monte_vegas_runval()

```
subroutine fgsl_monte_vegas_runval (
    type(fgsl_monte_vegas_state), intent(in) s,
    real(fgsl_double), intent(out) result,
    real(fgsl_double), intent(out) sigma )
```

49.41.1.23 fgsl_monte_vegas_setparams()

```
subroutine fgsl_monte_vegas_setparams (
    type(fgsl_monte_vegas_state), intent(inout) s,
    real(fgsl_double), intent(in) result,
    real(fgsl_double), intent(in) sigma,
    real(fgsl_double), intent(in) chisq,
    real(fgsl_double), intent(in) alpha,
    integer(fgsl_size_t), intent(in) iterations,
    integer(fgsl_int), intent(in) stage,
    integer(fgsl_int), intent(in) mode,
    integer(fgsl_int), intent(in) verbose,
    type(fgsl_file), intent(in) ostream )
```

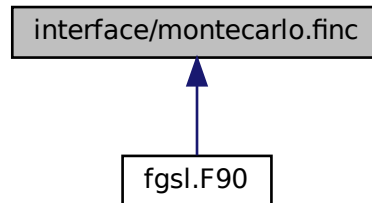
Accessor routine for setting the parameters for the VEGAS algorithm.

49.41.1.24 fgsl_monte_vegas_status()

```
logical function fgsl_monte_vegas_status (
    type(fgsl_monte_vegas_state), intent(in) monte_vegas )
```


49.42 interface/montecarlo.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [fgsl_monte_function_cinit](#) (func, dim, params)
- subroutine [fgsl_monte_function_cfree](#) (func)
- type(c_ptr) function [gsl_monte_plain_alloc](#) (dim)
- integer(c_int) function [gsl_monte_plain_init](#) (s)
- integer(c_int) function [gsl_monte_plain_integrate](#) (f, xl, xu, dim, calls, r, s, result, abserr)
- subroutine [gsl_monte_plain_free](#) (s)
- type(c_ptr) function [gsl_monte_miser_alloc](#) (dim)
- integer(c_int) function [gsl_monte_miser_init](#) (s)
- integer(c_int) function [gsl_monte_miser_integrate](#) (f, xl, xu, dim, calls, r, s, result, abserr)
- subroutine [gsl_monte_miser_free](#) (s)
- type(c_ptr) function [gsl_monte_vegas_alloc](#) (dim)
- integer(c_int) function [gsl_monte_vegas_init](#) (s)
- integer(c_int) function [gsl_monte_vegas_integrate](#) (f, xl, xu, dim, calls, r, s, result, abserr)
- subroutine [gsl_monte_vegas_free](#) (s)
- real(c_double) function [gsl_monte_vegas_chisq](#) (s)
- subroutine [gsl_monte_vegas_runval](#) (s, result, sigma)
- subroutine [fgsl_monte_miser_csetparams](#) (s, estimate_frac, min_calls, min_calls_per_bisection, alpha, dither)
- subroutine [fgsl_monte_miser_cgetparams](#) (s, estimate_frac, min_calls, min_calls_per_bisection, alpha, dither)
- subroutine [fgsl_monte_vegas_csetparams](#) (s, result, sigma, chisq, alpha, iterations, stage, mode, verbose, ostream)
- subroutine [fgsl_monte_vegas_cgetparams](#) (s, result, sigma, chisq, alpha, iterations, stage, mode, verbose, ostream)

49.42.1 Function/Subroutine Documentation

49.42.1.1 fgsl_monte_function_cfree()

```
subroutine fgsl_monte_function_cfree (  
    type(c_ptr), value func )
```

49.42.1.2 fgsl_monte_function_cinit()

```
type(c_ptr) function fgsl_monte_function_cinit (  
    type(c_funptr), value func,  
    integer(c_size_t), value dim,  
    type(c_ptr), value params )
```

49.42.1.3 fgsl_monte_miser_cgetparams()

```
subroutine fgsl_monte_miser_cgetparams (  
    type(c_ptr), value s,  
    real(c_double), intent(out) estimate_frac,  
    integer(c_size_t), intent(out) min_calls,  
    integer(c_size_t), intent(out) min_calls_per_bisection,  
    real(c_double), intent(out) alpha,  
    real(c_double), intent(out) dither )
```

49.42.1.4 fgsl_monte_miser_csetparams()

```
subroutine fgsl_monte_miser_csetparams (  
    type(c_ptr), value s,  
    real(c_double), value estimate_frac,  
    integer(c_size_t), value min_calls,  
    integer(c_size_t), value min_calls_per_bisection,  
    real(c_double), value alpha,  
    real(c_double), value dither )
```

49.42.1.5 fgsl_monte_vegas_cgetparams()

```
subroutine fgsl_monte_vegas_cgetparams (  
    type(c_ptr), value s,  
    real(c_double), intent(out) result,  
    real(c_double), intent(out) sigma,  
    real(c_double), intent(out) chisq,  
    real(c_double), intent(out) alpha,  
    integer(c_size_t), intent(out) iterations,  
    integer(c_int), intent(out) stage,  
    integer(c_int), intent(out) mode,  
    integer(c_int), intent(out) verbose,  
    type(c_ptr), value ostream )
```

49.42.1.6 fgsl_monte_vegas_csetparams()

```
subroutine fgsl_monte_vegas_csetparams (
    type(c_ptr), value s,
    real(c_double), value result,
    real(c_double), value sigma,
    real(c_double), value chisq,
    real(c_double), value alpha,
    integer(c_size_t), value iterations,
    integer(c_int), value stage,
    integer(c_int), value mode,
    integer(c_int), value verbose,
    type(c_ptr), value ostream )
```

49.42.1.7 gsl_monte_miser_alloc()

```
type(c_ptr) function gsl_monte_miser_alloc (
    integer(c_size_t), value dim )
```

49.42.1.8 gsl_monte_miser_free()

```
subroutine gsl_monte_miser_free (
    type(c_ptr), value s )
```

49.42.1.9 gsl_monte_miser_init()

```
integer(c_int) function gsl_monte_miser_init (
    type(c_ptr), value s )
```

49.42.1.10 gsl_monte_miser_integrate()

```
integer(c_int) function gsl_monte_miser_integrate (
    type(c_ptr), value f,
    real(c_double), dimension(dim), intent(in) xl,
    real(c_double), dimension(dim), intent(in) xu,
    integer(c_size_t), value dim,
    integer(c_size_t), value calls,
    type(c_ptr), value r,
    type(c_ptr), value s,
    real(c_double), intent(out) result,
    real(c_double), intent(out) abserr )
```

49.42.1.11 gsl_monte_plain_alloc()

```
type(c_ptr) function gsl_monte_plain_alloc (
    integer(c_size_t), value dim )
```

49.42.1.12 gsl_monte_plain_free()

```
subroutine gsl_monte_plain_free (
    type(c_ptr), value s )
```

49.42.1.13 gsl_monte_plain_init()

```
integer(c_int) function gsl_monte_plain_init (
    type(c_ptr), value s )
```

49.42.1.14 gsl_monte_plain_integrate()

```
integer(c_int) function gsl_monte_plain_integrate (
    type(c_ptr), value f,
    real(c_double), dimension(dim), intent(in) xl,
    real(c_double), dimension(dim), intent(in) xu,
    integer(c_size_t), value dim,
    integer(c_size_t), value calls,
    type(c_ptr), value r,
    type(c_ptr), value s,
    real(c_double), intent(out) result,
    real(c_double), intent(out) abserr )
```

49.42.1.15 gsl_monte_vegas_alloc()

```
type(c_ptr) function gsl_monte_vegas_alloc (
    integer(c_size_t), value dim )
```

49.42.1.16 gsl_monte_vegas_chisq()

```
real(c_double) function gsl_monte_vegas_chisq (
    type(c_ptr), value s )
```

49.42.1.17 gsl_monte_vegas_free()

```
subroutine gsl_monte_vegas_free (
    type(c_ptr), value s )
```

49.42.1.18 gsl_monte_vegas_init()

```
integer(c_int) function gsl_monte_vegas_init (
    type(c_ptr), value s )
```

49.42.1.19 gsl_monte_vegas_integrate()

```
integer(c_int) function gsl_monte_vegas_integrate (
    type(c_ptr), value f,
    real(c_double), dimension(dim), intent(in) xl,
    real(c_double), dimension(dim), intent(in) xu,
    integer(c_size_t), value dim,
    integer(c_size_t), value calls,
    type(c_ptr), value r,
    type(c_ptr), value s,
    real(c_double), intent(out) result,
    real(c_double), intent(out) abserr )
```

49.42.1.20 gsl_monte_vegas_runval()

```
subroutine gsl_monte_vegas_runval (
    type(c_ptr), value s,
    real(c_double) result,
    real(c_double) sigma )
```

49.43 api/movstat.finc File Reference**Functions/Subroutines**

- type(fgsl_movstat_workspace) function [fgsl_movstat_alloc](#) (k)
- type(fgsl_movstat_workspace) function [fgsl_movstat_alloc2](#) (k, j)
- subroutine [fgsl_movstat_free](#) (w)
- integer(fgsl_int) function [fgsl_movstat_mean](#) (endtype, x, y, w)
- integer(fgsl_int) function [fgsl_movstat_variance](#) (endtype, x, y, w)
- integer(fgsl_int) function [fgsl_movstat_sd](#) (endtype, x, y, w)
- integer(fgsl_int) function [fgsl_movstat_min](#) (endtype, x, y, w)
- integer(fgsl_int) function [fgsl_movstat_max](#) (endtype, x, y, w)
- integer(fgsl_int) function [fgsl_movstat_minmax](#) (endtype, x, y_min, y_max, w)
- integer(fgsl_int) function [fgsl_movstat_sum](#) (endtype, x, y, w)
- integer(fgsl_int) function [fgsl_movstat_median](#) (endtype, x, y, w)
- integer(fgsl_int) function [fgsl_movstat_mad0](#) (endtype, x, xmedian, xmad, w)
- integer(fgsl_int) function [fgsl_movstat_mad](#) (endtype, x, xmedian, xmad, w)
- integer(fgsl_int) function [fgsl_movstat_qqr](#) (endtype, x, q, xqqr, w)
- integer(fgsl_int) function [fgsl_movstat_sn](#) (endtype, x, xscale, w)
- integer(fgsl_int) function [fgsl_movstat_qn](#) (endtype, x, xscale, w)
- integer(fgsl_int) function [fgsl_movstat_apply](#) (endtype, f, x, y, w)
- integer(fgsl_int) function [fgsl_movstat_fill](#) (endtype, x, idx, h, j, window)

49.43.1 Function/Subroutine Documentation

49.43.1.1 fgsl_movstat_alloc()

```
type(fgsl_movstat_workspace) function fgsl_movstat_alloc (
    integer(fgsl_size_t), intent(in) k )
```

49.43.1.2 fgsl_movstat_alloc2()

```
type(fgsl_movstat_workspace) function fgsl_movstat_alloc2 (
    integer(fgsl_size_t), intent(in) k,
    integer(fgsl_size_t), intent(in) j )
```

49.43.1.3 fgsl_movstat_apply()

```
integer(fgsl_int) function fgsl_movstat_apply (
    integer(fgsl_int), intent(in) endtype,
    type(fgsl_movstat_function), intent(in) f,
    type(fgsl_vector), intent(in) x,
    type(fgsl_vector), intent(inout) y,
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.4 fgsl_movstat_fill()

```
integer(fgsl_int) function fgsl_movstat_fill (
    integer(fgsl_int), intent(in) endtype,
    type(fgsl_vector), intent(in) x,
    integer(fgsl_size_t), intent(in) idx,
    integer(fgsl_size_t), intent(in) h,
    integer(fgsl_size_t), intent(in) j,
    real(fgsl_double), intent(inout) window )
```

49.43.1.5 fgsl_movstat_free()

```
subroutine fgsl_movstat_free (
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.6 fgsl_movstat_mad()

```
integer(fgsl_int) function fgsl_movstat_mad (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) xmedian,  
    type(fgsl_vector), intent(inout) xmad,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.7 fgsl_movstat_mad0()

```
integer(fgsl_int) function fgsl_movstat_mad0 (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) xmedian,  
    type(fgsl_vector), intent(inout) xmad,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.8 fgsl_movstat_max()

```
integer(fgsl_int) function fgsl_movstat_max (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.9 fgsl_movstat_mean()

```
integer(fgsl_int) function fgsl_movstat_mean (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.10 fgsl_movstat_median()

```
integer(fgsl_int) function fgsl_movstat_median (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.11 fgsl_movstat_min()

```
integer(fgsl_int) function fgsl_movstat_min (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.12 fgsl_movstat_minmax()

```
integer(fgsl_int) function fgsl_movstat_minmax (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y_min,  
    type(fgsl_vector), intent(inout) y_max,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.13 fgsl_movstat_qn()

```
integer(fgsl_int) function fgsl_movstat_qn (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) xscale,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.14 fgsl_movstat_qqr()

```
integer(fgsl_int) function fgsl_movstat_qqr (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    real(fgsl_double), intent(in) q,  
    type(fgsl_vector), intent(inout) xqqr,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.15 fgsl_movstat_sd()

```
integer(fgsl_int) function fgsl_movstat_sd (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y,  
    type(fgsl_movstat_workspace), intent(inout) w )
```


49.43.1.16 fgsl_movstat_sn()

```
integer(fgsl_int) function fgsl_movstat_sn (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) xscale,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.17 fgsl_movstat_sum()

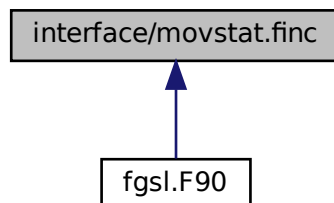
```
integer(fgsl_int) function fgsl_movstat_sum (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.43.1.18 fgsl_movstat_variance()

```
integer(fgsl_int) function fgsl_movstat_variance (  
    integer(fgsl_int), intent(in) endtype,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y,  
    type(fgsl_movstat_workspace), intent(inout) w )
```

49.44 interface/movstat.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- `type(c_ptr)` function [gsl_movstat_alloc](#) (`k`)
- `type(c_ptr)` function [gsl_movstat_alloc2](#) (`k`, `j`)
- subroutine [gsl_movstat_free](#) (`w`)
- `integer(c_int)` function [gsl_movstat_mean](#) (`endtype`, `x`, `y`, `w`)
- `integer(c_int)` function [gsl_movstat_variance](#) (`endtype`, `x`, `y`, `w`)
- `integer(c_int)` function [gsl_movstat_sd](#) (`endtype`, `x`, `y`, `w`)
- `integer(c_int)` function [gsl_movstat_min](#) (`endtype`, `x`, `y`, `w`)
- `integer(c_int)` function [gsl_movstat_max](#) (`endtype`, `x`, `y`, `w`)
- `integer(c_int)` function [gsl_movstat_minmax](#) (`endtype`, `x`, `y_min`, `y_max`, `w`)
- `integer(c_int)` function [gsl_movstat_sum](#) (`endtype`, `x`, `y`, `w`)
- `integer(c_int)` function [gsl_movstat_median](#) (`endtype`, `x`, `y`, `w`)
- `integer(c_int)` function [gsl_movstat_mad0](#) (`endtype`, `x`, `xmedian`, `xmad`, `w`)
- `integer(c_int)` function [gsl_movstat_mad](#) (`endtype`, `x`, `xmedian`, `xmad`, `w`)
- `integer(c_int)` function [gsl_movstat_qqr](#) (`endtype`, `x`, `q`, `xqqr`, `w`)
- `integer(c_int)` function [gsl_movstat_sn](#) (`endtype`, `x`, `xscale`, `w`)
- `integer(c_int)` function [gsl_movstat_qn](#) (`endtype`, `x`, `xscale`, `w`)
- `integer(c_int)` function [gsl_movstat_apply](#) (`endtype`, `f`, `x`, `y`, `w`)
- `integer(c_int)` function [gsl_movstat_fill](#) (`endtype`, `x`, `idx`, `h`, `j`, `window`)

49.44.1 Function/Subroutine Documentation

49.44.1.1 [gsl_movstat_alloc\(\)](#)

```
type(c_ptr) function gsl_movstat_alloc (
    integer(c_size_t), value k )
```

49.44.1.2 [gsl_movstat_alloc2\(\)](#)

```
type(c_ptr) function gsl_movstat_alloc2 (
    integer(c_size_t), value k,
    integer(c_size_t), value j )
```

49.44.1.3 [gsl_movstat_apply\(\)](#)

```
integer(c_int) function gsl_movstat_apply (
    integer(c_int), value endtype,
    type(fgsl_movstat_function) f,
    type(c_ptr), value x,
    type(c_ptr), value y,
    type(c_ptr), value w )
```

49.44.1.4 gsl_movstat_fill()

```
integer(c_int) function gsl_movstat_fill (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    integer(c_size_t), value idx,  
    integer(c_size_t), value h,  
    integer(c_size_t), value j,  
    real(c_double) window )
```

49.44.1.5 gsl_movstat_free()

```
subroutine gsl_movstat_free (  
    type(c_ptr), value w )
```

49.44.1.6 gsl_movstat_mad()

```
integer(c_int) function gsl_movstat_mad (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value xmedian,  
    type(c_ptr), value xmad,  
    type(c_ptr), value w )
```

49.44.1.7 gsl_movstat_mad0()

```
integer(c_int) function gsl_movstat_mad0 (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value xmedian,  
    type(c_ptr), value xmad,  
    type(c_ptr), value w )
```

49.44.1.8 gsl_movstat_max()

```
integer(c_int) function gsl_movstat_max (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value w )
```

49.44.1.9 `gsl_movstat_mean()`

```
integer(c_int) function gsl_movstat_mean (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value w )
```

49.44.1.10 `gsl_movstat_median()`

```
integer(c_int) function gsl_movstat_median (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value w )
```

49.44.1.11 `gsl_movstat_min()`

```
integer(c_int) function gsl_movstat_min (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value w )
```

49.44.1.12 `gsl_movstat_minmax()`

```
integer(c_int) function gsl_movstat_minmax (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value y_min,  
    type(c_ptr), value y_max,  
    type(c_ptr), value w )
```

49.44.1.13 `gsl_movstat_qn()`

```
integer(c_int) function gsl_movstat_qn (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value xscale,  
    type(c_ptr), value w )
```

49.44.1.14 gsl_movstat_qqr()

```
integer(c_int) function gsl_movstat_qqr (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    real(c_double), value q,  
    type(c_ptr), value xqqr,  
    type(c_ptr), value w )
```

49.44.1.15 gsl_movstat_sd()

```
integer(c_int) function gsl_movstat_sd (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value w )
```

49.44.1.16 gsl_movstat_sn()

```
integer(c_int) function gsl_movstat_sn (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value xscale,  
    type(c_ptr), value w )
```

49.44.1.17 gsl_movstat_sum()

```
integer(c_int) function gsl_movstat_sum (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value w )
```

49.44.1.18 gsl_movstat_variance()

```
integer(c_int) function gsl_movstat_variance (  
    integer(c_int), value endtype,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value w )
```

49.45 api/multifit.finc File Reference

Functions/Subroutines

- type(fgsl_multifit_function) function [fgsl_multifit_function_init](#) (func, ndim, p, params)
- type(fgsl_multifit_function_fdf) function [fgsl_multifit_function_fdf_init](#) (func, dfunc, fdfunc, ndim, p, params)
- subroutine [fgsl_multifit_function_free](#) (fun)
- subroutine [fgsl_multifit_function_fdf_free](#) (fun)
- type(fgsl_multifit_fsolver) function [fgsl_multifit_fsolver_alloc](#) (t, n, p)
- type(fgsl_multifit_fdfsolver) function [fgsl_multifit_fdfsolver_alloc](#) (t, n, p)
- subroutine [fgsl_multifit_fsolver_free](#) (s)
- subroutine [fgsl_multifit_fdfsolver_free](#) (s)
- integer(fgsl_int) function [fgsl_multifit_fsolver_set](#) (s, f, x)
- integer(fgsl_int) function [fgsl_multifit_fdfsolver_set](#) (s, fdf, x)
- integer(fgsl_int) function [fgsl_multifit_fdfsolver_wset](#) (s, fdf, x, wts)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_multifit_fsolver_name](#) (s)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_multifit_fdfsolver_name](#) (s)
- integer(fgsl_int) function [fgsl_multifit_fsolver_iterate](#) (s)
- integer(fgsl_int) function [fgsl_multifit_fdfsolver_iterate](#) (s)
- type(fgsl_vector) function [fgsl_multifit_fsolver_position](#) (s)
- type(fgsl_vector) function [fgsl_multifit_fdfsolver_position](#) (s)
- type(fgsl_vector) function [fgsl_multifit_fdfsolver_dx](#) (s)
- type(fgsl_vector) function [fgsl_multifit_fdfsolver_f](#) (s)
- integer(fgsl_int) function [fgsl_multifit_fdfsolver_jac](#) (s, J)
- integer(fgsl_int) function [fgsl_multifit_test_delta](#) (dx, x, epsabs, epsrel)
- integer(fgsl_int) function [fgsl_multifit_test_gradient](#) (g, epsabs)
- integer(fgsl_int) function [fgsl_multifit_gradient](#) (j, f, g)
- integer(fgsl_int) function [fgsl_multifit_covar](#) (j, epsrel, covar)
- integer(fgsl_int) function [fgsl_multifit_covar_qrpt](#) (r, perm, epsrel, covar)
- logical function [fgsl_multifit_fsolver_status](#) (s)
- logical function [fgsl_multifit_fdfsolver_status](#) (s)
- integer(fgsl_int) function [fgsl_multifit_fsolver_driver](#) (s, maxiter, epsabs, epsrel)
- integer(fgsl_int) function [fgsl_multifit_fdfsolver_driver](#) (s, maxiter, xtol, gtol, ftol, info)
- integer(fgsl_int) function [fgsl_multifit_fdfsolver_dif_df_wts](#) (x, wts, fdf, f, J)
- integer(fgsl_int) function [fgsl_multifit_fdfsolver_dif_df_nowts](#) (x, fdf, f, J)
- type(fgsl_multifit_robust_workspace) function [fgsl_multifit_robust_alloc](#) (t, n, p)
- subroutine [fgsl_multifit_robust_free](#) (w)
- integer(fgsl_int) function [fgsl_multifit_robust_tune](#) (tune, w)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_multifit_robust_name](#) (w)
- type(fgsl_multifit_robust_stats) function [fgsl_multifit_robust_statistics](#) (w)
- integer(c_int) function [fgsl_multifit_robust](#) (X, y, c, cov, w)
- integer(c_int) function [fgsl_multifit_robust_est](#) (x, c, cov, y, y_err)
- type(fgsl_vector) function [fgsl_multifit_fdfsolver_residual](#) (s)
- integer(fgsl_size_t) function [fgsl_multifit_fdfsolver_niter](#) (s)
- integer(fgsl_int) function [fgsl_multifit_eval_wf_wts](#) (fdf, x, wts, y)
- integer(fgsl_int) function [fgsl_multifit_eval_wf_nowts](#) (fdf, x, y)
- integer(fgsl_int) function [fgsl_multifit_eval_wdf_wts](#) (fdf, x, wts, dy)
- integer(fgsl_int) function [fgsl_multifit_eval_wdf_nowts](#) (fdf, x, dy)
- integer(fgsl_int) function [fgsl_multifit_fdfsolver_test](#) (s, xtol, gtol, ftol, info)
- type(fgsl_multifit_linear_workspace) function [fgsl_multifit_linear_alloc](#) (n, p)
- subroutine [fgsl_multifit_linear_free](#) (w)
- integer(fgsl_int) function [fgsl_multifit_linear](#) (x, y, c, cov, chisq, work)
- integer(fgsl_int) function [fgsl_multifit_linear_tsvd](#) (x, y, tol, c, cov, chisq, rank, work)
- integer(fgsl_int) function [fgsl_multifit_linear_svd](#) (x, work)

- integer(fgsl_int) function [fgsl_multifit_linear_bsvd](#) (X, work)
- integer(fgsl_int) function [fgsl_multifit_linear_solve](#) (lambda, X, y, c, rnorm, snorm, work)
- integer(fgsl_int) function [fgsl_multifit_linear_applyw](#) (X, w, y, WX, Wy)
- integer(fgsl_int) function [fgsl_multifit_linear_stdform1](#) (L, X, y, Xs, ys, work)
- integer(fgsl_int) function [fgsl_multifit_linear_wstdform1](#) (L, X, w, y, Xs, ys, work)
- integer(fgsl_int) function [fgsl_multifit_linear_l_decomp](#) (L, tau)
- integer(fgsl_int) function [fgsl_multifit_linear_stdform2](#) (LQR, Ltau, X, y, Xs, ys, M, work)
- integer(fgsl_int) function [fgsl_multifit_linear_wstdform2](#) (LQR, Ltau, X, w, y, Xs, ys, M, work)
- integer(fgsl_int) function [fgsl_multifit_linear_genform1](#) (L, cs, c, work)
- integer(fgsl_int) function [fgsl_multifit_linear_genform2](#) (LQR, Ltau, X, y, cs, M, c, work)
- integer(fgsl_int) function [fgsl_multifit_linear_wgenform2](#) (LQR, Ltau, X, w, y, cs, M, c, work)
- integer(fgsl_int) function [fgsl_multifit_linear_lreg](#) (smin, smax, reg_param)
- integer(fgsl_int) function [fgsl_multifit_linear_lcurve](#) (y, reg_param, rho, eta, work)
- integer(fgsl_int) function [fgsl_multifit_linear_lcurvature](#) (y, reg_param, rho, eta, kappa, work)
- integer(fgsl_int) function [fgsl_multifit_linear_lcorner](#) (rho, eta, idx)
- integer(fgsl_int) function [fgsl_multifit_linear_lcorner2](#) (reg_param, eta, idx)
- integer(fgsl_int) function [fgsl_multifit_linear_gcv_init](#) (y, reg_param, uty, delta0, work)
- integer(fgsl_int) function [fgsl_multifit_linear_gcv_curve](#) (reg_param, uty, delta0, g, work)
- integer(fgsl_int) function [fgsl_multifit_linear_gcv_min](#) (reg_param, uty, delta0, g, lambda, work)
- real(fgsl_double) function [fgsl_multifit_linear_gcv_calc](#) (lambda, uty, delta0, work)
- integer(fgsl_int) function [fgsl_multifit_linear_gcv](#) (y, reg_param, g, lambda, g_lambda, work)
- integer(fgsl_int) function [fgsl_multifit_linear_lk](#) (p, k, l)
- integer(fgsl_int) function [fgsl_multifit_linear_lsobolev](#) (p, kmax, alpha, l, work)
- real(fgsl_double) function [fgsl_multifit_linear_rcond](#) (w)
- integer(fgsl_int) function [fgsl_multifit_robust_maxiter](#) (maxiter, w)
- integer(fgsl_int) function [fgsl_multifit_robust_residuals](#) (X, y, c, r, w)
- integer(fgsl_int) function [fgsl_multifit_robust_weights](#) (r, wts, w)
- integer(fgsl_int) function [fgsl_multifit_wlinear](#) (x, w, y, c, cov, chisq, work)
- integer(fgsl_int) function [fgsl_multifit_wlinear_tsvd](#) (x, w, y, tol, c, cov, chisq, rank, work)
- integer(fgsl_int) function [fgsl_multifit_wlinear_svd](#) (x, w, y, tol, rank, c, cov, chisq, work)
- integer(fgsl_int) function [fgsl_multifit_wlinear_usvd](#) (x, w, y, tol, rank, c, cov, chisq, work)
- integer(fgsl_int) function [fgsl_multifit_linear_est](#) (x, c, cov, y, y_err)
- integer(fgsl_int) function [fgsl_multifit_linear_residuals](#) (x, y, c, r)
- integer(fgsl_size_t) function [fgsl_multifit_linear_rank](#) (tol, work)
- logical function [fgsl_multifit_status](#) (multifit)
- type(fgsl_multifit_fdfridge) function [fgsl_multifit_fdfridge_alloc](#) (T, n, p)
- subroutine [fgsl_multifit_fdfridge_free](#) (work)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_multifit_fdfridge_name](#) (w)
- type(fgsl_vector) function [fgsl_multifit_fdfridge_position](#) (w)
- type(fgsl_vector) function [fgsl_multifit_fdfridge_residual](#) (w)
- integer(fgsl_size_t) function [fgsl_multifit_fdfridge_niter](#) (w)
- integer(fgsl_int) function [fgsl_multifit_fdfridge_set](#) (w, f, x, lambda)
- integer(fgsl_int) function [fgsl_multifit_fdfridge_wset](#) (w, f, x, lambda, wts)
- integer(fgsl_int) function [fgsl_multifit_fdfridge_set2](#) (w, f, x, lambda)
- integer(fgsl_int) function [fgsl_multifit_fdfridge_wset2](#) (w, f, x, lambda, wts)
- integer(fgsl_int) function [fgsl_multifit_fdfridge_set3](#) (w, f, x, L)
- integer(fgsl_int) function [fgsl_multifit_fdfridge_wset3](#) (w, f, x, L, wts)
- integer(fgsl_int) function [fgsl_multifit_fdfridge_iterate](#) (w)
- integer(fgsl_int) function [fgsl_multifit_fdfridge_driver](#) (w, maxiter, xtol, gtol, ftol, info)

49.45.1 Function/Subroutine Documentation

49.45.1.1 fgsl_multifit_covar()

```
integer(fgsl_int) function fgsl_multifit_covar (  
    type(fgsl_matrix), intent(in) j,  
    real(fgsl_double), intent(in) epsrel,  
    type(fgsl_matrix), intent(inout) covar )
```

49.45.1.2 fgsl_multifit_covar_qrpt()

```
integer(fgsl_int) function fgsl_multifit_covar_qrpt (  
    type(fgsl_matrix), intent(inout) r,  
    type(fgsl_permutation), intent(inout) perm,  
    real(fgsl_double), intent(in) epsrel,  
    type(fgsl_matrix), intent(inout) covar )
```

49.45.1.3 fgsl_multifit_eval_wdf_nowts()

```
integer(fgsl_int) function fgsl_multifit_eval_wdf_nowts (  
    type(fgsl_multifit_function_fdf), intent(inout) fdf,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_matrix), intent(inout) dy )
```

49.45.1.4 fgsl_multifit_eval_wdf_wts()

```
integer(fgsl_int) function fgsl_multifit_eval_wdf_wts (  
    type(fgsl_multifit_function_fdf), intent(inout) fdf,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(in) wts,  
    type(fgsl_matrix), intent(inout) dy )
```

49.45.1.5 fgsl_multifit_eval_wf_nowts()

```
integer(fgsl_int) function fgsl_multifit_eval_wf_nowts (  
    type(fgsl_multifit_function_fdf), intent(inout) fdf,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(inout) y )
```


49.45.1.6 fgsl_multifit_eval_wf_wts()

```
integer(fgsl_int) function fgsl_multifit_eval_wf_wts (  
    type(fgsl_multifit_function_fdf), intent(inout) fdf,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(in) wts,  
    type(fgsl_vector), intent(inout) y )
```

49.45.1.7 fgsl_multifit_fdfridge_alloc()

```
type(fgsl_multifit_fdfridge) function fgsl_multifit_fdfridge_alloc (  
    type(fgsl_multifit_fdfsolver_type), intent(in) T,  
    integer(fgsl_size_t), intent(in) n,  
    integer(fgsl_size_t), intent(in) p )
```

49.45.1.8 fgsl_multifit_fdfridge_driver()

```
integer(fgsl_int) function fgsl_multifit_fdfridge_driver (  
    type(fgsl_multifit_fdfridge), intent(inout) w,  
    integer(fgsl_size_t), intent(in) maxiter,  
    real(fgsl_double), intent(in) xtol,  
    real(fgsl_double), intent(in) gtol,  
    real(fgsl_double), intent(in) ftol,  
    integer(fgsl_int), intent(out) info )
```

49.45.1.9 fgsl_multifit_fdfridge_free()

```
subroutine fgsl_multifit_fdfridge_free (  
    type(fgsl_multifit_fdfridge), intent(inout) work )
```

49.45.1.10 fgsl_multifit_fdfridge_iterate()

```
integer(fgsl_int) function fgsl_multifit_fdfridge_iterate (  
    type(fgsl_multifit_fdfridge), intent(inout) w )
```

49.45.1.11 fgsl_multifit_fdfridge_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multifit_fdfridge_name (  
    type(fgsl_multifit_fdfridge), intent(in) w )
```

49.45.1.12 fgsl_multifit_fdfridge_niter()

```
integer(fgsl_size_t) function fgsl_multifit_fdfridge_niter (  
    type(fgsl_multifit_fdfridge), intent(in) w )
```

49.45.1.13 fgsl_multifit_fdfridge_position()

```
type(fgsl_vector) function fgsl_multifit_fdfridge_position (  
    type(fgsl_multifit_fdfridge), intent(in) w )
```

49.45.1.14 fgsl_multifit_fdfridge_residual()

```
type(fgsl_vector) function fgsl_multifit_fdfridge_residual (  
    type(fgsl_multifit_fdfridge), intent(in) w )
```

49.45.1.15 fgsl_multifit_fdfridge_set()

```
integer(fgsl_int) function fgsl_multifit_fdfridge_set (  
    type(fgsl_multifit_fdfridge), intent(inout) w,  
    type(fgsl_multifit_function_fdf), intent(inout) f,  
    type(fgsl_vector), intent(in) x,  
    real(fgsl_double), intent(in) lambda )
```

49.45.1.16 fgsl_multifit_fdfridge_set2()

```
integer(fgsl_int) function fgsl_multifit_fdfridge_set2 (  
    type(fgsl_multifit_fdfridge), intent(inout) w,  
    type(fgsl_multifit_function_fdf), intent(inout) f,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(in) lambda )
```

49.45.1.17 fgsl_multifit_fdfridge_set3()

```
integer(fgsl_int) function fgsl_multifit_fdfridge_set3 (  
    type(fgsl_multifit_fdfridge), intent(inout) w,  
    type(fgsl_multifit_function_fdf), intent(inout) f,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_matrix), intent(in) L )
```

49.45.1.18 fgsl_multifit_fdfridge_wset()

```
integer(fgsl_int) function fgsl_multifit_fdfridge_wset (
    type(fgsl_multifit_fdfridge), intent(inout) w,
    type(fgsl_multifit_function_fdf), intent(inout) f,
    type(fgsl_vector), intent(in) x,
    real(fgsl_double), intent(in) lambda,
    type(fgsl_vector), intent(in) wts )
```

49.45.1.19 fgsl_multifit_fdfridge_wset2()

```
integer(fgsl_int) function fgsl_multifit_fdfridge_wset2 (
    type(fgsl_multifit_fdfridge), intent(inout) w,
    type(fgsl_multifit_function_fdf), intent(inout) f,
    type(fgsl_vector), intent(in) x,
    type(fgsl_vector), intent(in) lambda,
    type(fgsl_vector), intent(in) wts )
```

49.45.1.20 fgsl_multifit_fdfridge_wset3()

```
integer(fgsl_int) function fgsl_multifit_fdfridge_wset3 (
    type(fgsl_multifit_fdfridge), intent(inout) w,
    type(fgsl_multifit_function_fdf), intent(inout) f,
    type(fgsl_vector), intent(in) x,
    type(fgsl_matrix), intent(in) L,
    type(fgsl_vector), intent(in) wts )
```

49.45.1.21 fgsl_multifit_fdfsolver_alloc()

```
type(fgsl_multifit_fdfsolver) function fgsl_multifit_fdfsolver_alloc (
    type(fgsl_multifit_fdfsolver_type), intent(in) t,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) p )
```

49.45.1.22 fgsl_multifit_fdfsolver_dif_df_nowts()

```
integer(fgsl_int) function fgsl_multifit_fdfsolver_dif_df_nowts (
    type(fgsl_vector), intent(in) x,
    type(fgsl_multifit_function_fdf), intent(inout) fdf,
    type(fgsl_vector), intent(in) f,
    type(fgsl_matrix), intent(inout) J )
```

49.45.1.23 fgsl_multifit_fdfsolver_dif_df_wts()

```
integer(fgsl_int) function fgsl_multifit_fdfsolver_dif_df_wts (
    type(fgsl_vector), intent(in) x,
    type(fgsl_vector), intent(in) wts,
    type(fgsl_multifit_function_fdf), intent(inout) fdf,
    type(fgsl_vector), intent(in) f,
    type(fgsl_matrix), intent(inout) J )
```

49.45.1.24 fgsl_multifit_fdfsolver_driver()

```
integer(fgsl_int) function fgsl_multifit_fdfsolver_driver (
    type(fgsl_multifit_fdfsolver), intent(inout) s,
    integer(fgsl_size_t), intent(in) maxiter,
    real(fgsl_double), intent(in) xtol,
    real(fgsl_double), intent(in) gtol,
    real(fgsl_double), intent(in) ftol,
    integer(fgsl_int), intent(out) info )
```

49.45.1.25 fgsl_multifit_fdfsolver_dx()

```
type(fgsl_vector) function fgsl_multifit_fdfsolver_dx (
    type(fgsl_multifit_fdfsolver), intent(in) s )
```

49.45.1.26 fgsl_multifit_fdfsolver_f()

```
type(fgsl_vector) function fgsl_multifit_fdfsolver_f (
    type(fgsl_multifit_fdfsolver), intent(in) s )
```

49.45.1.27 fgsl_multifit_fdfsolver_free()

```
subroutine fgsl_multifit_fdfsolver_free (
    type(fgsl_multifit_fdfsolver), intent(inout) s )
```

49.45.1.28 fgsl_multifit_fdfsolver_iterate()

```
integer(fgsl_int) function fgsl_multifit_fdfsolver_iterate (
    type(fgsl_multifit_fdfsolver), intent(in) s )
```

49.45.1.29 fgsl_multifit_fdfsolver_jac()

```
integer(fgsl_int) function fgsl_multifit_fdfsolver_jac (
    type(fgsl_multifit_fdfsolver), intent(in) s,
    type(fgsl_matrix), intent(inout) J )
```

49.45.1.30 fgsl_multifit_fdfsolver_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multifit_fdfsolver_name (
    type(fgsl_multifit_fdfsolver), intent(in) s )
```

49.45.1.31 fgsl_multifit_fdfsolver_niter()

```
integer(fgsl_size_t) function fgsl_multifit_fdfsolver_niter (
    type(fgsl_multifit_fdfsolver), intent(in) s )
```

49.45.1.32 fgsl_multifit_fdfsolver_position()

```
type(fgsl_vector) function fgsl_multifit_fdfsolver_position (
    type(fgsl_multifit_fdfsolver), intent(in) s )
```

49.45.1.33 fgsl_multifit_fdfsolver_residual()

```
type(fgsl_vector) function fgsl_multifit_fdfsolver_residual (
    type(fgsl_multifit_fdfsolver), intent(in) s )
```

49.45.1.34 fgsl_multifit_fdfsolver_set()

```
integer(fgsl_int) function fgsl_multifit_fdfsolver_set (
    type(fgsl_multifit_fdfsolver), intent(inout) s,
    type(fgsl_multifit_function_fdf), intent(in) fdf,
    type(fgsl_vector), intent(in) x )
```

49.45.1.35 fgsl_multifit_fdfsolver_status()

```
logical function fgsl_multifit_fdfsolver_status (  
    type(fgsl_multifit_fdfsolver), intent(in) s )
```

49.45.1.36 fgsl_multifit_fdfsolver_test()

```
integer(fgsl_int) function fgsl_multifit_fdfsolver_test (  
    type(fgsl_multifit_fdfsolver), intent(in) s,  
    real(fgsl_double), intent(in) xtol,  
    real(fgsl_double), intent(in) gtol,  
    real(fgsl_double), intent(in) ftol,  
    integer(fgsl_int), intent(out) info )
```

49.45.1.37 fgsl_multifit_fdfsolver_wset()

```
integer(fgsl_int) function fgsl_multifit_fdfsolver_wset (  
    type(fgsl_multifit_fdfsolver), intent(inout) s,  
    type(fgsl_multifit_function_fdf), intent(in) fdf,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(in) wts )
```

49.45.1.38 fgsl_multifit_fsolver_alloc()

```
type(fgsl_multifit_fsolver) function fgsl_multifit_fsolver_alloc (  
    type(fgsl_multifit_fsolver_type), intent(in) t,  
    integer(fgsl_size_t), intent(in) n,  
    integer(fgsl_size_t), intent(in) p )
```

49.45.1.39 fgsl_multifit_fsolver_driver()

```
integer(fgsl_int) function fgsl_multifit_fsolver_driver (  
    type(fgsl_multifit_fsolver), intent(inout) s,  
    integer(fgsl_size_t), intent(in) maxiter,  
    real(fgsl_double), intent(in) epsabs,  
    real(fgsl_double), intent(in) epsrel )
```

49.45.1.40 fgsl_multifit_fsolver_free()

```
subroutine fgsl_multifit_fsolver_free (  
    type(fgsl_multifit_fsolver), intent(inout) s )
```

49.45.1.41 fgsl_multifit_fsolver_iterate()

```
integer(fgsl_int) function fgsl_multifit_fsolver_iterate (  
    type(fgsl_multifit_fsolver), intent(in) s )
```

49.45.1.42 fgsl_multifit_fsolver_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multifit_fsolver_name (  
    type(fgsl_multifit_fsolver), intent(in) s )
```

49.45.1.43 fgsl_multifit_fsolver_position()

```
type(fgsl_vector) function fgsl_multifit_fsolver_position (  
    type(fgsl_multifit_fsolver), intent(in) s )
```

49.45.1.44 fgsl_multifit_fsolver_set()

```
integer(fgsl_int) function fgsl_multifit_fsolver_set (  
    type(fgsl_multifit_fsolver), intent(inout) s,  
    type(fgsl_multifit_function), intent(in) f,  
    type(fgsl_vector), intent(in) x )
```

49.45.1.45 fgsl_multifit_fsolver_status()

```
logical function fgsl_multifit_fsolver_status (  
    type(fgsl_multifit_fsolver), intent(in) s )
```

49.45.1.46 fgsl_multifit_function_fdf_free()

```
subroutine fgsl_multifit_function_fdf_free (  
    type(fgsl_multifit_function_fdf), intent(inout) fun )
```

49.45.1.47 fgsl_multifit_function_fdf_init()

```

type(fgsl_multifit_function_fdf) function fgsl_multifit_function_fdf_init (
    func,
    dfunc,
    fdfunc,
    integer(fgsl_size_t), intent(in) ndim,
    integer(fgsl_size_t), intent(in) p,
    type(c_ptr), intent(in) params )

```

49.45.1.48 fgsl_multifit_function_free()

```

subroutine fgsl_multifit_function_free (
    type(fgsl_multifit_function), intent(inout) fun )

```

49.45.1.49 fgsl_multifit_function_init()

```

type(fgsl_multifit_function) function fgsl_multifit_function_init (
    func,
    integer(fgsl_size_t), intent(in) ndim,
    integer(fgsl_size_t), intent(in) p,
    type(c_ptr), intent(in) params )

```

49.45.1.50 fgsl_multifit_gradient()

```

integer(fgsl_int) function fgsl_multifit_gradient (
    type(fgsl_matrix), intent(in) j,
    type(fgsl_vector), intent(in) f,
    type(fgsl_vector), intent(inout) g )

```

49.45.1.51 fgsl_multifit_linear()

```

integer(fgsl_int) function fgsl_multifit_linear (
    type(fgsl_matrix), intent(in) x,
    type(fgsl_vector), intent(in) y,
    type(fgsl_vector), intent(inout) c,
    type(fgsl_matrix), intent(inout) cov,
    real(fgsl_double), intent(inout) chisq,
    type(fgsl_multifit_linear_workspace), intent(inout) work )

```


49.45.1.52 fgsl_multifit_linear_alloc()

```
type(fgsl_multifit_linear_workspace) function fgsl_multifit_linear_alloc (
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) p )
```

49.45.1.53 fgsl_multifit_linear_applyw()

```
integer(fgsl_int) function fgsl_multifit_linear_applyw (
    type(fgsl_matrix), intent(in) X,
    type(fgsl_vector), intent(in) w,
    type(fgsl_vector), intent(in) y,
    type(fgsl_matrix), intent(inout) WX,
    type(fgsl_vector), intent(inout) Wy )
```

49.45.1.54 fgsl_multifit_linear_bsvd()

```
integer(fgsl_int) function fgsl_multifit_linear_bsvd (
    type(fgsl_matrix), intent(in) X,
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.55 fgsl_multifit_linear_est()

```
integer(fgsl_int) function fgsl_multifit_linear_est (
    type(fgsl_vector), intent(in) x,
    type(fgsl_vector), intent(in) c,
    type(fgsl_matrix), intent(in) cov,
    real(fgsl_double), intent(inout) y,
    real(fgsl_double), intent(inout) y_err )
```

49.45.1.56 fgsl_multifit_linear_free()

```
subroutine fgsl_multifit_linear_free (
    type(fgsl_multifit_linear_workspace), intent(inout) w )
```

49.45.1.57 fgsl_multifit_linear_gcv()

```
integer(fgsl_int) function fgsl_multifit_linear_gcv (  
    type(fgsl_vector), intent(in) y,  
    type(fgsl_vector), intent(inout) reg_param,  
    type(fgsl_vector), intent(inout) g,  
    real(fgsl_double), intent(inout) lambda,  
    real(fgsl_double), intent(inout) g_lambda,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.58 fgsl_multifit_linear_gcv_calc()

```
real(fgsl_double) function fgsl_multifit_linear_gcv_calc (  
    real(fgsl_double), intent(in) lambda,  
    type(fgsl_vector), intent(in) uty,  
    real(fgsl_double), intent(in) delta0,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.59 fgsl_multifit_linear_gcv_curve()

```
integer(fgsl_int) function fgsl_multifit_linear_gcv_curve (  
    type(fgsl_vector), intent(in) reg_param,  
    type(fgsl_vector), intent(in) uty,  
    real(fgsl_double), intent(in) delta0,  
    type(fgsl_vector), intent(inout) g,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.60 fgsl_multifit_linear_gcv_init()

```
integer(fgsl_int) function fgsl_multifit_linear_gcv_init (  
    type(fgsl_vector), intent(in) y,  
    type(fgsl_vector), intent(inout) reg_param,  
    type(fgsl_vector), intent(inout) uty,  
    real(fgsl_double), intent(inout) delta0,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.61 fgsl_multifit_linear_gcv_min()

```
integer(fgsl_int) function fgsl_multifit_linear_gcv_min (  
    type(fgsl_vector), intent(in) reg_param,  
    type(fgsl_vector), intent(in) uty,  
    real(fgsl_double), intent(in) delta0,  
    type(fgsl_vector), intent(in) g,  
    real(fgsl_double), intent(inout) lambda,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.62 fgsl_multifit_linear_genform1()

```
integer(fgsl_int) function fgsl_multifit_linear_genform1 (  
    type(fgsl_vector), intent(in) L,  
    type(fgsl_vector), intent(in) cs,  
    type(fgsl_vector), intent(inout) c,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.63 fgsl_multifit_linear_genform2()

```
integer(fgsl_int) function fgsl_multifit_linear_genform2 (  
    type(fgsl_matrix), intent(in) LQR,  
    type(fgsl_vector), intent(in) Ltau,  
    type(fgsl_matrix), intent(in) X,  
    type(fgsl_vector), intent(in) y,  
    type(fgsl_vector), intent(in) cs,  
    type(fgsl_matrix), intent(in) M,  
    type(fgsl_vector), intent(inout) c,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.64 fgsl_multifit_linear_l_decomp()

```
integer(fgsl_int) function fgsl_multifit_linear_l_decomp (  
    type(fgsl_matrix), intent(inout) L,  
    type(fgsl_vector), intent(inout) tau )
```

49.45.1.65 fgsl_multifit_linear_lcorner()

```
integer(fgsl_int) function fgsl_multifit_linear_lcorner (  
    type(fgsl_vector), intent(in) rho,  
    type(fgsl_vector), intent(in) eta,  
    integer(fgsl_size_t), intent(out) idx )
```

49.45.1.66 fgsl_multifit_linear_lcorner2()

```
integer(fgsl_int) function fgsl_multifit_linear_lcorner2 (  
    type(fgsl_vector), intent(in) reg_param,  
    type(fgsl_vector), intent(in) eta,  
    integer(fgsl_size_t), intent(out) idx )
```

49.45.1.67 fgsl_multifit_linear_lcurvature()

```
integer(fgsl_int) function fgsl_multifit_linear_lcurvature (
    type(fgsl_vector), intent(in) y,
    type(fgsl_vector), intent(in) reg_param,
    type(fgsl_vector), intent(in) rho,
    type(fgsl_vector), intent(in) eta,
    type(fgsl_vector), intent(inout) kappa,
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.68 fgsl_multifit_linear_lcurve()

```
integer(fgsl_int) function fgsl_multifit_linear_lcurve (
    type(fgsl_vector), intent(in) y,
    type(fgsl_vector), intent(inout) reg_param,
    type(fgsl_vector), intent(inout) rho,
    type(fgsl_vector), intent(inout) eta,
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.69 fgsl_multifit_linear_lk()

```
integer(fgsl_int) function fgsl_multifit_linear_lk (
    integer(fgsl_size_t), intent(in) p,
    integer(fgsl_size_t), intent(in) k,
    type(fgsl_matrix), intent(inout) l )
```

49.45.1.70 fgsl_multifit_linear_lreg()

```
integer(fgsl_int) function fgsl_multifit_linear_lreg (
    real(fgsl_double), intent(in) smin,
    real(fgsl_double), intent(in) smax,
    type(fgsl_vector), intent(inout) reg_param )
```

49.45.1.71 fgsl_multifit_linear_lsobolev()

```
integer(fgsl_int) function fgsl_multifit_linear_lsobolev (
    integer(fgsl_size_t), intent(in) p,
    integer(fgsl_size_t), intent(in) kmax,
    type(fgsl_vector), intent(in) alpha,
    type(fgsl_matrix), intent(inout) l,
    type(fgsl_multifit_linear_workspace) work )
```

49.45.1.72 fgsl_multifit_linear_rank()

```
integer(fgsl_size_t) function fgsl_multifit_linear_rank (
    real(fgsl_double), intent(in) tol,
    type(fgsl_multifit_linear_workspace), intent(in) work )
```

49.45.1.73 fgsl_multifit_linear_rcond()

```
real(fgsl_double) function fgsl_multifit_linear_rcond (
    type(fgsl_multifit_linear_workspace), intent(in) w )
```

49.45.1.74 fgsl_multifit_linear_residuals()

```
integer(fgsl_int) function fgsl_multifit_linear_residuals (
    type(fgsl_matrix), intent(in) x,
    type(fgsl_vector), intent(in) y,
    type(fgsl_vector), intent(in) c,
    type(fgsl_vector), intent(inout) r )
```

49.45.1.75 fgsl_multifit_linear_solve()

```
integer(fgsl_int) function fgsl_multifit_linear_solve (
    real(fgsl_double), intent(in) lambda,
    type(fgsl_matrix), intent(in) X,
    type(fgsl_vector), intent(in) y,
    type(fgsl_vector), intent(inout) c,
    real(fgsl_double), intent(out) rnorm,
    real(fgsl_double), intent(out) snorm,
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.76 fgsl_multifit_linear_stdform1()

```
integer(fgsl_int) function fgsl_multifit_linear_stdform1 (
    type(fgsl_vector), intent(in) L,
    type(fgsl_matrix), intent(in) X,
    type(fgsl_vector), intent(in) y,
    type(fgsl_matrix), intent(inout) Xs,
    type(fgsl_vector), intent(inout) ys,
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.77 fgsl_multifit_linear_stdform2()

```
integer(fgsl_int) function fgsl_multifit_linear_stdform2 (  
    type(fgsl_matrix), intent(in) LQR,  
    type(fgsl_vector), intent(in) Ltau,  
    type(fgsl_matrix), intent(in) X,  
    type(fgsl_vector), intent(in) y,  
    type(fgsl_matrix), intent(inout) Xs,  
    type(fgsl_vector), intent(inout) ys,  
    type(fgsl_matrix), intent(inout) M,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.78 fgsl_multifit_linear_svd()

```
integer(fgsl_int) function fgsl_multifit_linear_svd (  
    type(fgsl_matrix), intent(in) x,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.79 fgsl_multifit_linear_tsvd()

```
integer(fgsl_int) function fgsl_multifit_linear_tsvd (  
    type(fgsl_matrix), intent(in) x,  
    type(fgsl_vector), intent(in) y,  
    real(fgsl_double), intent(in) tol,  
    type(fgsl_vector), intent(inout) c,  
    type(fgsl_matrix), intent(inout) cov,  
    real(fgsl_double), intent(inout) chisq,  
    integer(fgsl_size_t), intent(inout) rank,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.80 fgsl_multifit_linear_wgenform2()

```
integer(fgsl_int) function fgsl_multifit_linear_wgenform2 (  
    type(fgsl_matrix), intent(in) LQR,  
    type(fgsl_vector), intent(in) Ltau,  
    type(fgsl_matrix), intent(in) X,  
    type(fgsl_vector), intent(in) w,  
    type(fgsl_vector), intent(in) y,  
    type(fgsl_vector), intent(in) cs,  
    type(fgsl_matrix), intent(in) M,  
    type(fgsl_vector), intent(inout) c,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.81 fgsl_multifit_linear_wstdform1()

```
integer(fgsl_int) function fgsl_multifit_linear_wstdform1 (
    type(fgsl_vector), intent(in) L,
    type(fgsl_matrix), intent(in) X,
    type(fgsl_vector), intent(in) w,
    type(fgsl_vector), intent(in) y,
    type(fgsl_matrix), intent(inout) Xs,
    type(fgsl_vector), intent(inout) ys,
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.82 fgsl_multifit_linear_wstdform2()

```
integer(fgsl_int) function fgsl_multifit_linear_wstdform2 (
    type(fgsl_matrix), intent(in) LQR,
    type(fgsl_vector), intent(in) Ltau,
    type(fgsl_matrix), intent(in) X,
    type(fgsl_vector), intent(in) w,
    type(fgsl_vector), intent(in) y,
    type(fgsl_matrix), intent(inout) Xs,
    type(fgsl_vector), intent(inout) ys,
    type(fgsl_matrix), intent(inout) M,
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.83 fgsl_multifit_robust()

```
integer(c_int) function fgsl_multifit_robust (
    type(fgsl_matrix), intent(in) X,
    type(fgsl_vector), intent(in) y,
    type(fgsl_vector), intent(inout) c,
    type(fgsl_matrix), intent(inout) cov,
    type(fgsl_multifit_robust_workspace), intent(inout) w )
```

49.45.1.84 fgsl_multifit_robust_alloc()

```
type(fgsl_multifit_robust_workspace) function fgsl_multifit_robust_alloc (
    type(fgsl_multifit_robust_type), intent(in) t,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) p )
```

49.45.1.85 fgsl_multifit_robust_est()

```
integer(c_int) function fgsl_multifit_robust_est (  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(in) c,  
    type(fgsl_matrix), intent(in) cov,  
    real(c_double), intent(out) y,  
    real(c_double), intent(out) y_err )
```

49.45.1.86 fgsl_multifit_robust_free()

```
subroutine fgsl_multifit_robust_free (  
    type(fgsl_multifit_robust_workspace), intent(inout) w )
```

49.45.1.87 fgsl_multifit_robust_maxiter()

```
integer(fgsl_int) function fgsl_multifit_robust_maxiter (  
    integer(fgsl_size_t), intent(in) maxiter,  
    type(fgsl_multifit_robust_workspace), intent(inout) w )
```

49.45.1.88 fgsl_multifit_robust_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multifit_robust_name (  
    type(fgsl_multifit_robust_workspace), intent(in) w )
```

49.45.1.89 fgsl_multifit_robust_residuals()

```
integer(fgsl_int) function fgsl_multifit_robust_residuals (  
    type(fgsl_matrix), intent(in) X,  
    type(fgsl_vector), intent(in) y,  
    type(fgsl_vector), intent(in) c,  
    type(fgsl_vector), intent(inout) r,  
    type(fgsl_multifit_robust_workspace), intent(inout) w )
```

49.45.1.90 fgsl_multifit_robust_statistics()

```
type(fgsl_multifit_robust_stats) function fgsl_multifit_robust_statistics (  
    type(fgsl_multifit_robust_workspace), intent(in) w )
```


49.45.1.91 fgsl_multifit_robust_tune()

```
integer(fgsl_int) function fgsl_multifit_robust_tune (
    real(fgsl_double), intent(in) tune,
    type(fgsl_multifit_robust_workspace), intent(in) w )
```

49.45.1.92 fgsl_multifit_robust_weights()

```
integer(fgsl_int) function fgsl_multifit_robust_weights (
    type(fgsl_vector), intent(in) r,
    type(fgsl_vector), intent(inout) wts,
    type(fgsl_multifit_robust_workspace), intent(inout) w )
```

49.45.1.93 fgsl_multifit_status()

```
logical function fgsl_multifit_status (
    type(fgsl_multifit_linear_workspace), intent(in) multifit )
```

49.45.1.94 fgsl_multifit_test_delta()

```
integer(fgsl_int) function fgsl_multifit_test_delta (
    type(fgsl_vector), intent(in) dx,
    type(fgsl_vector), intent(in) x,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel )
```

49.45.1.95 fgsl_multifit_test_gradient()

```
integer(fgsl_int) function fgsl_multifit_test_gradient (
    type(fgsl_vector), intent(in) g,
    real(fgsl_double), intent(in) epsabs )
```

49.45.1.96 fgsl_multifit_wlinear()

```
integer(fgsl_int) function fgsl_multifit_wlinear (
    type(fgsl_matrix), intent(in) x,
    type(fgsl_vector), intent(in) w,
    type(fgsl_vector), intent(in) y,
    type(fgsl_vector), intent(inout) c,
    type(fgsl_matrix), intent(inout) cov,
    real(fgsl_double), intent(inout) chisq,
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.97 fgsl_multifit_wlinear_svd()

```
integer(fgsl_int) function fgsl_multifit_wlinear_svd (  
    type(fgsl_matrix), intent(in) x,  
    type(fgsl_vector), intent(in) w,  
    type(fgsl_vector), intent(in) y,  
    real(fgsl_double), intent(in) tol,  
    integer(fgsl_size_t), intent(inout) rank,  
    type(fgsl_vector), intent(inout) c,  
    type(fgsl_matrix), intent(inout) cov,  
    real(fgsl_double), intent(inout) chisq,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.98 fgsl_multifit_wlinear_tsvd()

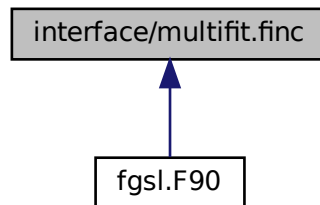
```
integer(fgsl_int) function fgsl_multifit_wlinear_tsvd (  
    type(fgsl_matrix), intent(in) x,  
    type(fgsl_vector), intent(in) w,  
    type(fgsl_vector), intent(in) y,  
    real(fgsl_double), intent(in) tol,  
    type(fgsl_vector), intent(inout) c,  
    type(fgsl_matrix), intent(inout) cov,  
    real(fgsl_double), intent(inout) chisq,  
    integer(fgsl_size_t), intent(inout) rank,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.45.1.99 fgsl_multifit_wlinear_usvd()

```
integer(fgsl_int) function fgsl_multifit_wlinear_usvd (  
    type(fgsl_matrix), intent(in) x,  
    type(fgsl_vector), intent(in) w,  
    type(fgsl_vector), intent(in) y,  
    real(fgsl_double), intent(in) tol,  
    integer(fgsl_size_t), intent(inout) rank,  
    type(fgsl_vector), intent(inout) c,  
    type(fgsl_matrix), intent(inout) cov,  
    real(fgsl_double), intent(inout) chisq,  
    type(fgsl_multifit_linear_workspace), intent(inout) work )
```

49.46 interface/multifit.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_multifit_fsolver_alloc](#) (t, n, p)
- type(c_ptr) function [gsl_multifit_fdfsolver_alloc](#) (t, n, p)
- integer(c_int) function [gsl_multifit_fsolver_set](#) (s, f, x)
- integer(c_int) function [gsl_multifit_fdfsolver_set](#) (s, f, x)
- integer(c_int) function [gsl_multifit_fdfsolver_wset](#) (s, f, x, wts)
- subroutine [gsl_multifit_fsolver_free](#) (s)
- subroutine [gsl_multifit_fdfsolver_free](#) (s)
- type(c_ptr) function [gsl_multifit_fsolver_name](#) (s)
- type(c_ptr) function [gsl_multifit_fdfsolver_name](#) (s)
- integer(c_int) function [gsl_multifit_fsolver_iterate](#) (s)
- integer(c_int) function [gsl_multifit_fdfsolver_iterate](#) (s)
- type(c_ptr) function [gsl_multifit_fsolver_position](#) (s)
- type(c_ptr) function [gsl_multifit_fdfsolver_position](#) (s)
- type(c_ptr) function [gsl_multifit_fdfsolver_dx](#) (s)
- type(c_ptr) function [gsl_multifit_fdfsolver_f](#) (s)
- integer(c_int) function [gsl_multifit_fdfsolver_jac](#) (s, J)
- integer(c_int) function [gsl_multifit_test_delta](#) (dx, x, epsabs, epsrel)
- integer(c_int) function [gsl_multifit_test_gradient](#) (g, epsabs)
- integer(c_int) function [gsl_multifit_gradient](#) (j, f, g)
- integer(c_int) function [gsl_multifit_covar](#) (j, epsrel, cov)
- integer(c_int) function [gsl_multifit_covar_qrpt](#) (r, perm, epsrel, cov)
- type(c_ptr) function [fgsl_aux_multifit_robust_alloc](#) (i)
- integer(c_int) function [gsl_multifit_fsolver_driver](#) (s, maxiter, epsabs, epsrel)
- integer(c_int) function [gsl_multifit_fdfsolver_driver](#) (s, maxiter, xt看, gtol, ftol, info)
- integer(c_int) function [gsl_multifit_fdfsolver_dif_df](#) (x, wts, fdf, f, J)
- type(c_ptr) function [gsl_multifit_robust_alloc](#) (T, n, p)
- subroutine [gsl_multifit_robust_free](#) (w)
- integer(c_int) function [gsl_multifit_robust_tune](#) (tune, w)
- type(c_ptr) function [gsl_multifit_robust_name](#) (w)
- type(gsl_multifit_robust_stats) function [gsl_multifit_robust_statistics](#) (w)
- integer(c_int) function [gsl_multifit_robust](#) (X, y, c, cov, w)
- integer(c_int) function [gsl_multifit_robust_est](#) (x, c, cov, y, y_err)
- type(c_ptr) function [fgsl_multifit_function_cinit](#) (fp, ndim, p, params)

- type(c_ptr) function [fgsl_multifit_function_fdf_cinit](#) (fp, dfp, fdfp, ndim, p, params)
- subroutine [fgsl_multifit_function_cfree](#) (f)
- subroutine [fgsl_multifit_function_fdf_cfree](#) (f)
- type(c_ptr) function [fgsl_aux_multifit_fsolver_alloc](#) (it)
- type(c_ptr) function [fgsl_aux_multifit_fdfsolver_alloc](#) (it)
- type(c_ptr) function [gsl_multifit_fdfsolver_residual](#) (s)
- integer(c_size_t) function [gsl_multifit_fdfsolver_niter](#) (s)
- integer(c_int) function [gsl_multifit_eval_wf](#) (fdf, x, wts, y)
- integer(c_int) function [gsl_multifit_eval_wdf](#) (fdf, x, wts, dy)
- integer(c_int) function [gsl_multifit_fdfsolver_test](#) (s, xtol, gtol, ftol, info)
- type(c_ptr) function [gsl_multifit_linear_alloc](#) (n, p)
- subroutine [gsl_multifit_linear_free](#) (w)
- integer(c_int) function [gsl_multifit_linear](#) (x, y, c, cov, chisq, work)
- integer(c_int) function [gsl_multifit_linear_tsvd](#) (x, y, tol, c, cov, chisq, rank, work)
- integer(c_int) function [gsl_multifit_linear_svd](#) (x, work)
- integer(c_int) function [gsl_multifit_linear_bsvd](#) (x, work)
- integer(c_int) function [gsl_multifit_linear_solve](#) (lambda, x, y, c, rnorm, snorm, work)
- integer(c_int) function [gsl_multifit_linear_applyw](#) (X, w, y, WX, Wy)
- integer(c_int) function [gsl_multifit_linear_stdform1](#) (L, X, y, Xs, ys, work)
- integer(c_int) function [gsl_multifit_linear_wstdform1](#) (L, X, w, y, Xs, ys, work)
- integer(c_int) function [gsl_multifit_linear_l_decomp](#) (L, tau)
- integer(c_int) function [gsl_multifit_linear_stdform2](#) (LQR, Ltau, X, y, Xs, ys, M, work)
- integer(c_int) function [gsl_multifit_linear_wstdform2](#) (LQR, Ltau, X, w, y, Xs, ys, M, work)
- integer(c_int) function [gsl_multifit_linear_genform1](#) (L, cs, c, work)
- integer(c_int) function [gsl_multifit_linear_genform2](#) (LQR, Ltau, X, y, cs, M, c, work)
- integer(c_int) function [gsl_multifit_linear_wgenform2](#) (LQR, Ltau, X, w, y, cs, M, c, work)
- integer(c_int) function [gsl_multifit_linear_lreg](#) (smin, smax, reg_param)
- integer(c_int) function [gsl_multifit_linear_lcurve](#) (y, reg_param, rho, eta, work)
- integer(c_int) function [gsl_multifit_linear_lcurvature](#) (y, reg_param, rho, eta, kappa, work)
- integer(c_int) function [gsl_multifit_linear_lcorner](#) (rho, eta, idx)
- integer(c_int) function [gsl_multifit_linear_lcorner2](#) (reg_param, eta, idx)
- integer(c_int) function [gsl_multifit_linear_gcv_init](#) (y, reg_param, uty, delta0, work)
- integer(c_int) function [gsl_multifit_linear_gcv_curve](#) (reg_param, uty, delta0, g, work)
- integer(c_int) function [gsl_multifit_linear_gcv_min](#) (reg_param, uty, delta0, g, lambda, work)
- real(c_double) function [gsl_multifit_linear_gcv_calc](#) (lambda, uty, delta0, work)
- integer(c_int) function [gsl_multifit_linear_gcv](#) (y, reg_param, g, lambda, g_lambda, work)
- integer(c_int) function [gsl_multifit_linear_lk](#) (p, k, L)
- integer(c_int) function [gsl_multifit_linear_lsobolev](#) (p, kmax, alpha, L, work)
- real(c_double) function [gsl_multifit_linear_rcond](#) (w)
- integer(c_int) function [gsl_multifit_robust_maxiter](#) (maxiter, w)
- integer(c_int) function [gsl_multifit_robust_weights](#) (r, wts, w)
- integer(c_int) function [gsl_multifit_robust_residuals](#) (X, y, c, r, w)
- integer(c_int) function [gsl_multifit_wlinear](#) (x, w, y, c, cov, chisq, work)
- integer(c_int) function [gsl_multifit_wlinear_tsvd](#) (x, w, y, tol, c, cov, chisq, rank, work)
- integer(c_int) function [gsl_multifit_wlinear_svd](#) (x, w, y, tol, rank, c, cov, chisq, work)
- integer(c_int) function [gsl_multifit_wlinear_usvd](#) (x, w, y, tol, rank, c, cov, chisq, work)
- integer(c_int) function [gsl_multifit_linear_est](#) (x, c, cov, y, y_err)
- integer(c_int) function [gsl_multifit_linear_residuals](#) (x, y, c, r)
- integer(c_size_t) function [gsl_multifit_linear_rank](#) (tol, work)
- type(c_ptr) function [gsl_multifit_fdfridge_alloc](#) (T, n, p)
- subroutine [gsl_multifit_fdfridge_free](#) (work)
- type(c_ptr) function [gsl_multifit_fdfridge_name](#) (w)
- type(c_ptr) function [gsl_multifit_fdfridge_position](#) (w)
- type(c_ptr) function [gsl_multifit_fdfridge_residual](#) (w)
- integer(c_size_t) function [gsl_multifit_fdfridge_niter](#) (w)

- integer(c_int) function [gsl_multifit_fdfridge_set](#) (w, f, x, lambda)
- integer(c_int) function [gsl_multifit_fdfridge_wset](#) (w, f, x, lambda, wts)
- integer(c_int) function [gsl_multifit_fdfridge_set2](#) (w, f, x, lambda)
- integer(c_int) function [gsl_multifit_fdfridge_wset2](#) (w, f, x, lambda, wts)
- integer(c_int) function [gsl_multifit_fdfridge_set3](#) (w, f, x, L)
- integer(c_int) function [gsl_multifit_fdfridge_wset3](#) (w, f, x, L, wts)
- integer(c_int) function [gsl_multifit_fdfridge_iterate](#) (w)
- integer(c_int) function [gsl_multifit_fdfridge_driver](#) (w, maxiter, xtol, gtol, ftol, info)

49.46.1 Function/Subroutine Documentation

49.46.1.1 fgsl_aux_multifit_fdsolver_alloc()

```
type(c_ptr) function fgsl_aux_multifit_fdsolver_alloc (  
    integer(c_int), value it )
```

49.46.1.2 fgsl_aux_multifit_fsolver_alloc()

```
type(c_ptr) function fgsl_aux_multifit_fsolver_alloc (  
    integer(c_int), value it )
```

49.46.1.3 fgsl_aux_multifit_robust_alloc()

```
type(c_ptr) function fgsl_aux_multifit_robust_alloc (  
    integer(c_int), value i )
```

49.46.1.4 fgsl_multifit_function_cfree()

```
subroutine fgsl_multifit_function_cfree (  
    type(c_ptr), value f )
```

49.46.1.5 fgsl_multifit_function_cinit()

```
type(c_ptr) function fgsl_multifit_function_cinit (  
    type(c_funptr), value fp,  
    integer(c_size_t), value ndim,  
    integer(c_size_t), value p,  
    type(c_ptr), value params )
```

49.46.1.6 fgsl_multifit_function_fdf_cfree()

```
subroutine fgsl_multifit_function_fdf_cfree (
    type(c_ptr), value f )
```

49.46.1.7 fgsl_multifit_function_fdf_cinit()

```
type(c_ptr) function fgsl_multifit_function_fdf_cinit (
    type(c_funptr), value fp,
    type(c_funptr), value dfp,
    type(c_funptr), value fdfp,
    integer(c_size_t), value ndim,
    integer(c_size_t), value p,
    type(c_ptr), value params )
```

49.46.1.8 gsl_multifit_covar()

```
integer(c_int) function gsl_multifit_covar (
    type(c_ptr), value j,
    real(c_double), value epsrel,
    type(c_ptr), value cov )
```

49.46.1.9 gsl_multifit_covar_qrpt()

```
integer(c_int) function gsl_multifit_covar_qrpt (
    type(c_ptr), value r,
    type(c_ptr), value perm,
    real(c_double), value epsrel,
    type(c_ptr), value cov )
```

49.46.1.10 gsl_multifit_eval_wdf()

```
integer(c_int) function gsl_multifit_eval_wdf (
    type(c_ptr), value fdf,
    type(c_ptr), value x,
    type(c_ptr), value wts,
    type(c_ptr), value dy )
```

49.46.1.11 gsl_multifit_eval_wf()

```
integer(c_int) function gsl_multifit_eval_wf (
    type(c_ptr), value fdf,
    type(c_ptr), value x,
    type(c_ptr), value wts,
    type(c_ptr), value y )
```

49.46.1.12 gsl_multifit_fdfridge_alloc()

```
type(c_ptr) function gsl_multifit_fdfridge_alloc (
    type(c_ptr), value T,
    integer(c_size_t), value n,
    integer(c_size_t), value p )
```

49.46.1.13 gsl_multifit_fdfridge_driver()

```
integer(c_int) function gsl_multifit_fdfridge_driver (
    type(c_ptr), value w,
    integer(c_size_t), value maxiter,
    real(c_double), value xtol,
    real(c_double), value gtol,
    real(c_double), value ftol,
    integer(c_int) info )
```

49.46.1.14 gsl_multifit_fdfridge_free()

```
subroutine gsl_multifit_fdfridge_free (
    type(c_ptr), value work )
```

49.46.1.15 gsl_multifit_fdfridge_iterate()

```
integer(c_int) function gsl_multifit_fdfridge_iterate (
    type(c_ptr), value w )
```

49.46.1.16 gsl_multifit_fdfridge_name()

```
type(c_ptr) function gsl_multifit_fdfridge_name (
    type(c_ptr), value w )
```

49.46.1.17 gsl_multifit_fdfridge_niter()

```
integer(c_size_t) function gsl_multifit_fdfridge_niter (  
    type(c_ptr), value w )
```

49.46.1.18 gsl_multifit_fdfridge_position()

```
type(c_ptr) function gsl_multifit_fdfridge_position (  
    type(c_ptr), value w )
```

49.46.1.19 gsl_multifit_fdfridge_residual()

```
type(c_ptr) function gsl_multifit_fdfridge_residual (  
    type(c_ptr), value w )
```

49.46.1.20 gsl_multifit_fdfridge_set()

```
integer(c_int) function gsl_multifit_fdfridge_set (  
    type(c_ptr), value w,  
    type(c_ptr), value f,  
    type(c_ptr), value x,  
    real(c_double), value lambda )
```

49.46.1.21 gsl_multifit_fdfridge_set2()

```
integer(c_int) function gsl_multifit_fdfridge_set2 (  
    type(c_ptr), value w,  
    type(c_ptr), value f,  
    type(c_ptr), value x,  
    type(c_ptr), value lambda )
```

49.46.1.22 gsl_multifit_fdfridge_set3()

```
integer(c_int) function gsl_multifit_fdfridge_set3 (  
    type(c_ptr), value w,  
    type(c_ptr), value f,  
    type(c_ptr), value x,  
    type(c_ptr), value L )
```


49.46.1.23 gsl_multifit_fdfridge_wset()

```
integer(c_int) function gsl_multifit_fdfridge_wset (  
    type(c_ptr), value w,  
    type(c_ptr), value f,  
    type(c_ptr), value x,  
    real(c_double), value lambda,  
    type(c_ptr), value wts )
```

49.46.1.24 gsl_multifit_fdfridge_wset2()

```
integer(c_int) function gsl_multifit_fdfridge_wset2 (  
    type(c_ptr), value w,  
    type(c_ptr), value f,  
    type(c_ptr), value x,  
    type(c_ptr), value lambda,  
    type(c_ptr), value wts )
```

49.46.1.25 gsl_multifit_fdfridge_wset3()

```
integer(c_int) function gsl_multifit_fdfridge_wset3 (  
    type(c_ptr), value w,  
    type(c_ptr), value f,  
    type(c_ptr), value x,  
    type(c_ptr), value L,  
    type(c_ptr), value wts )
```

49.46.1.26 gsl_multifit_fdfsolver_alloc()

```
type(c_ptr) function gsl_multifit_fdfsolver_alloc (  
    type(c_ptr), value t,  
    integer(c_size_t), value n,  
    integer(c_size_t), value p )
```

49.46.1.27 gsl_multifit_fdfsolver_dif_df()

```
integer(c_int) function gsl_multifit_fdfsolver_dif_df (  
    type(c_ptr), value x,  
    type(c_ptr), value wts,  
    type(c_ptr), value fdf,  
    type(c_ptr), value f,  
    type(c_ptr), value J )
```

49.46.1.28 gsl_multifit_fdfsolver_driver()

```
integer(c_int) function gsl_multifit_fdfsolver_driver (  
    type(c_ptr), value s,  
    integer(c_size_t), value maxiter,  
    real(c_double), value xtol,  
    real(c_double), value gtol,  
    real(c_double), value ftol,  
    integer(c_int) info )
```

49.46.1.29 gsl_multifit_fdfsolver_dx()

```
type(c_ptr) function gsl_multifit_fdfsolver_dx (  
    type(c_ptr), value s )
```

49.46.1.30 gsl_multifit_fdfsolver_f()

```
type(c_ptr) function gsl_multifit_fdfsolver_f (  
    type(c_ptr), value s )
```

49.46.1.31 gsl_multifit_fdfsolver_free()

```
subroutine gsl_multifit_fdfsolver_free (  
    type(c_ptr), value s )
```

49.46.1.32 gsl_multifit_fdfsolver_iterate()

```
integer(c_int) function gsl_multifit_fdfsolver_iterate (  
    type(c_ptr), value s )
```

49.46.1.33 gsl_multifit_fdfsolver_jac()

```
integer(c_int) function gsl_multifit_fdfsolver_jac (  
    type(c_ptr), value s,  
    type(c_ptr), value J )
```

49.46.1.34 gsl_multifit_fdfsolver_name()

```
type(c_ptr) function gsl_multifit_fdfsolver_name (  
    type(c_ptr), value s )
```

49.46.1.35 gsl_multifit_fdfsolver_niter()

```
integer(c_size_t) function gsl_multifit_fdfsolver_niter (  
    type(c_ptr), value s )
```

49.46.1.36 gsl_multifit_fdfsolver_position()

```
type(c_ptr) function gsl_multifit_fdfsolver_position (  
    type(c_ptr), value s )
```

49.46.1.37 gsl_multifit_fdfsolver_residual()

```
type(c_ptr) function gsl_multifit_fdfsolver_residual (  
    type(c_ptr), value s )
```

49.46.1.38 gsl_multifit_fdfsolver_set()

```
integer(c_int) function gsl_multifit_fdfsolver_set (  
    type(c_ptr), value s,  
    type(c_ptr), value f,  
    type(c_ptr), value x )
```

49.46.1.39 gsl_multifit_fdfsolver_test()

```
integer(c_int) function gsl_multifit_fdfsolver_test (  
    type(c_ptr), value s,  
    real(c_double), value xtol,  
    real(c_double), value gtol,  
    real(c_double), value ftol,  
    integer(c_int) info )
```

49.46.1.40 gsl_multifit_fdfsolver_wset()

```
integer(c_int) function gsl_multifit_fdfsolver_wset (
    type(c_ptr), value s,
    type(c_ptr), value f,
    type(c_ptr), value x,
    type(c_ptr), value wts )
```

49.46.1.41 gsl_multifit_fsolver_alloc()

```
type(c_ptr) function gsl_multifit_fsolver_alloc (
    type(c_ptr), value t,
    integer(c_size_t), value n,
    integer(c_size_t), value p )
```

49.46.1.42 gsl_multifit_fsolver_driver()

```
integer(c_int) function gsl_multifit_fsolver_driver (
    type(c_ptr), value s,
    integer(c_size_t), value maxiter,
    real(c_double), value epsabs,
    real(c_double), value epsrel )
```

49.46.1.43 gsl_multifit_fsolver_free()

```
subroutine gsl_multifit_fsolver_free (
    type(c_ptr), value s )
```

49.46.1.44 gsl_multifit_fsolver_iterate()

```
integer(c_int) function gsl_multifit_fsolver_iterate (
    type(c_ptr), value s )
```

49.46.1.45 gsl_multifit_fsolver_name()

```
type(c_ptr) function gsl_multifit_fsolver_name (
    type(c_ptr), value s )
```

49.46.1.46 gsl_multifit_fsolver_position()

```
type(c_ptr) function gsl_multifit_fsolver_position (
    type(c_ptr), value s )
```

49.46.1.47 gsl_multifit_fsolver_set()

```
integer(c_int) function gsl_multifit_fsolver_set (
    type(c_ptr), value s,
    type(c_ptr), value f,
    type(c_ptr), value x )
```

49.46.1.48 gsl_multifit_gradient()

```
integer(c_int) function gsl_multifit_gradient (
    type(c_ptr), value j,
    type(c_ptr), value f,
    type(c_ptr), value g )
```

49.46.1.49 gsl_multifit_linear()

```
integer(c_int) function gsl_multifit_linear (
    type(c_ptr), value x,
    type(c_ptr), value y,
    type(c_ptr), value c,
    type(c_ptr), value cov,
    real(c_double) chisq,
    type(c_ptr), value work )
```

49.46.1.50 gsl_multifit_linear_alloc()

```
type(c_ptr) function gsl_multifit_linear_alloc (
    integer(c_size_t), value n,
    integer(c_size_t), value p )
```

49.46.1.51 gsl_multifit_linear_applyw()

```
integer(c_int) function gsl_multifit_linear_applyw (  
    type(c_ptr), value X,  
    type(c_ptr), value w,  
    type(c_ptr), value y,  
    type(c_ptr), value WX,  
    type(c_ptr), value Wy )
```

49.46.1.52 gsl_multifit_linear_bsvd()

```
integer(c_int) function gsl_multifit_linear_bsvd (  
    type(c_ptr), value x,  
    type(c_ptr), value work )
```

49.46.1.53 gsl_multifit_linear_est()

```
integer(c_int) function gsl_multifit_linear_est (  
    type(c_ptr), value x,  
    type(c_ptr), value c,  
    type(c_ptr), value cov,  
    real(c_double) y,  
    real(c_double) y_err )
```

49.46.1.54 gsl_multifit_linear_free()

```
subroutine gsl_multifit_linear_free (  
    type(c_ptr), value w )
```

49.46.1.55 gsl_multifit_linear_gcv()

```
integer(c_int) function gsl_multifit_linear_gcv (  
    type(c_ptr), value y,  
    type(c_ptr), value reg_param,  
    type(c_ptr), value g,  
    real(c_double) lambda,  
    real(c_double) g_lambda,  
    type(c_ptr), value work )
```

49.46.1.56 gsl_multifit_linear_gcv_calc()

```
real(c_double) function gsl_multifit_linear_gcv_calc (  
    real(c_double), value lambda,  
    type(c_ptr), value uty,  
    real(c_double), value delta0,  
    type(c_ptr), value work )
```

49.46.1.57 gsl_multifit_linear_gcv_curve()

```
integer(c_int) function gsl_multifit_linear_gcv_curve (  
    type(c_ptr), value reg_param,  
    type(c_ptr), value uty,  
    real(c_double), value delta0,  
    type(c_ptr), value g,  
    type(c_ptr), value work )
```

49.46.1.58 gsl_multifit_linear_gcv_init()

```
integer(c_int) function gsl_multifit_linear_gcv_init (  
    type(c_ptr), value y,  
    type(c_ptr), value reg_param,  
    type(c_ptr), value uty,  
    real(c_double) delta0,  
    type(c_ptr), value work )
```

49.46.1.59 gsl_multifit_linear_gcv_min()

```
integer(c_int) function gsl_multifit_linear_gcv_min (  
    type(c_ptr), value reg_param,  
    type(c_ptr), value uty,  
    real(c_double), value delta0,  
    type(c_ptr), value g,  
    real(c_double) lambda,  
    type(c_ptr), value work )
```

49.46.1.60 gsl_multifit_linear_genform1()

```
integer(c_int) function gsl_multifit_linear_genform1 (  
    type(c_ptr), value L,  
    type(c_ptr), value cs,  
    type(c_ptr), value c,  
    type(c_ptr), value work )
```

49.46.1.61 gsl_multifit_linear_genform2()

```
integer(c_int) function gsl_multifit_linear_genform2 (  
    type(c_ptr), value LQR,  
    type(c_ptr), value Ltau,  
    type(c_ptr), value X,  
    type(c_ptr), value y,  
    type(c_ptr), value cs,  
    type(c_ptr), value M,  
    type(c_ptr), value c,  
    type(c_ptr), value work )
```

49.46.1.62 gsl_multifit_linear_l_decomp()

```
integer(c_int) function gsl_multifit_linear_l_decomp (  
    type(c_ptr), value L,  
    type(c_ptr), value tau )
```

49.46.1.63 gsl_multifit_linear_lcorner()

```
integer(c_int) function gsl_multifit_linear_lcorner (  
    type(c_ptr), value rho,  
    type(c_ptr), value eta,  
    integer(c_size_t) idx )
```

49.46.1.64 gsl_multifit_linear_lcorner2()

```
integer(c_int) function gsl_multifit_linear_lcorner2 (  
    type(c_ptr), value reg_param,  
    type(c_ptr), value eta,  
    integer(c_size_t) idx )
```

49.46.1.65 gsl_multifit_linear_lcurvature()

```
integer(c_int) function gsl_multifit_linear_lcurvature (  
    type(c_ptr), value y,  
    type(c_ptr), value reg_param,  
    type(c_ptr), value rho,  
    type(c_ptr), value eta,  
    type(c_ptr), value kappa,  
    type(c_ptr), value work )
```


49.46.1.66 gsl_multifit_linear_lcurve()

```
integer(c_int) function gsl_multifit_linear_lcurve (  
    type(c_ptr), value y,  
    type(c_ptr), value reg_param,  
    type(c_ptr), value rho,  
    type(c_ptr), value eta,  
    type(c_ptr), value work )
```

49.46.1.67 gsl_multifit_linear_lk()

```
integer(c_int) function gsl_multifit_linear_lk (  
    integer(c_size_t), value p,  
    integer(c_size_t), value k,  
    type(c_ptr), value L )
```

49.46.1.68 gsl_multifit_linear_lreg()

```
integer(c_int) function gsl_multifit_linear_lreg (  
    real(c_double), value smin,  
    real(c_double), value smax,  
    type(c_ptr), value reg_param )
```

49.46.1.69 gsl_multifit_linear_lsobolev()

```
integer(c_int) function gsl_multifit_linear_lsobolev (  
    integer(c_size_t), value p,  
    integer(c_size_t), value kmax,  
    type(c_ptr), value alpha,  
    type(c_ptr), value L,  
    type(c_ptr), value work )
```

49.46.1.70 gsl_multifit_linear_rank()

```
integer(c_size_t) function gsl_multifit_linear_rank (  
    real(c_double), value tol,  
    type(c_ptr), value work )
```

49.46.1.71 gsl_multifit_linear_rcond()

```
real(c_double) function gsl_multifit_linear_rcond (  
    type(c_ptr), value w )
```

49.46.1.72 gsl_multifit_linear_residuals()

```
integer(c_int) function gsl_multifit_linear_residuals (  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value c,  
    type(c_ptr), value r )
```

49.46.1.73 gsl_multifit_linear_solve()

```
integer(c_int) function gsl_multifit_linear_solve (  
    real(c_double), value lambda,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    type(c_ptr), value c,  
    real(c_double) rnorm,  
    real(c_double) snorm,  
    type(c_ptr), value work )
```

49.46.1.74 gsl_multifit_linear_stdform1()

```
integer(c_int) function gsl_multifit_linear_stdform1 (  
    type(c_ptr), value L,  
    type(c_ptr), value X,  
    type(c_ptr), value y,  
    type(c_ptr), value Xs,  
    type(c_ptr), value ys,  
    type(c_ptr), value work )
```

49.46.1.75 gsl_multifit_linear_stdform2()

```
integer(c_int) function gsl_multifit_linear_stdform2 (  
    type(c_ptr), value LQR,  
    type(c_ptr), value Ltau,  
    type(c_ptr), value X,  
    type(c_ptr), value y,  
    type(c_ptr), value Xs,  
    type(c_ptr), value ys,  
    type(c_ptr), value M,  
    type(c_ptr), value work )
```

49.46.1.76 gsl_multifit_linear_svd()

```
integer(c_int) function gsl_multifit_linear_svd (  
    type(c_ptr), value x,  
    type(c_ptr), value work )
```

49.46.1.77 gsl_multifit_linear_tsvd()

```
integer(c_int) function gsl_multifit_linear_tsvd (  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    real(c_double), value tol,  
    type(c_ptr), value c,  
    type(c_ptr), value cov,  
    real(c_double) chisq,  
    integer(c_size_t) rank,  
    type(c_ptr), value work )
```

49.46.1.78 gsl_multifit_linear_wgenform2()

```
integer(c_int) function gsl_multifit_linear_wgenform2 (  
    type(c_ptr), value LQR,  
    type(c_ptr), value Ltau,  
    type(c_ptr), value X,  
    type(c_ptr), value w,  
    type(c_ptr), value y,  
    type(c_ptr), value cs,  
    type(c_ptr), value M,  
    type(c_ptr), value c,  
    type(c_ptr), value work )
```

49.46.1.79 gsl_multifit_linear_wstdform1()

```
integer(c_int) function gsl_multifit_linear_wstdform1 (  
    type(c_ptr), value L,  
    type(c_ptr), value X,  
    type(c_ptr), value w,  
    type(c_ptr), value y,  
    type(c_ptr), value Xs,  
    type(c_ptr), value ys,  
    type(c_ptr), value work )
```

49.46.1.80 gsl_multifit_linear_wstdform2()

```
integer(c_int) function gsl_multifit_linear_wstdform2 (  
    type(c_ptr), value LQR,  
    type(c_ptr), value Ltau,  
    type(c_ptr), value X,  
    type(c_ptr), value w,  
    type(c_ptr), value y,  
    type(c_ptr), value Xs,  
    type(c_ptr), value ys,  
    type(c_ptr), value M,  
    type(c_ptr), value work )
```

49.46.1.81 gsl_multifit_robust()

```
integer(c_int) function gsl_multifit_robust (  
    type(c_ptr), value X,  
    type(c_ptr), value y,  
    type(c_ptr), value c,  
    type(c_ptr), value cov,  
    type(c_ptr), value w )
```

49.46.1.82 gsl_multifit_robust_alloc()

```
type(c_ptr) function gsl_multifit_robust_alloc (  
    type(c_ptr), value T,  
    integer(c_size_t), value n,  
    integer(c_size_t), value p )
```

49.46.1.83 gsl_multifit_robust_est()

```
integer(c_int) function gsl_multifit_robust_est (  
    type(c_ptr), value x,  
    type(c_ptr), value c,  
    type(c_ptr), value cov,  
    real(c_double), intent(out) y,  
    real(c_double), intent(out) y_err )
```

49.46.1.84 gsl_multifit_robust_free()

```
subroutine gsl_multifit_robust_free (  
    type(c_ptr), value w )
```

49.46.1.85 gsl_multifit_robust_maxiter()

```
integer(c_int) function gsl_multifit_robust_maxiter (  
    integer(c_size_t), value maxiter,  
    type(c_ptr), value w )
```

49.46.1.86 gsl_multifit_robust_name()

```
type(c_ptr) function gsl_multifit_robust_name (  
    type(c_ptr), value w )
```

49.46.1.87 gsl_multifit_robust_residuals()

```
integer(c_int) function gsl_multifit_robust_residuals (  
    type(c_ptr), value X,  
    type(c_ptr), value y,  
    type(c_ptr), value c,  
    type(c_ptr), value r,  
    type(c_ptr), value w )
```

49.46.1.88 gsl_multifit_robust_statistics()

```
type(gsl_multifit_robust_stats) function gsl_multifit_robust_statistics (  
    type(c_ptr), value w )
```

49.46.1.89 gsl_multifit_robust_tune()

```
integer(c_int) function gsl_multifit_robust_tune (  
    real(c_double), value tune,  
    type(c_ptr), value w )
```

49.46.1.90 gsl_multifit_robust_weights()

```
integer(c_int) function gsl_multifit_robust_weights (  
    type(c_ptr), value r,  
    type(c_ptr), value wts,  
    type(c_ptr), value w )
```

49.46.1.91 gsl_multifit_test_delta()

```
integer(c_int) function gsl_multifit_test_delta (  
    type(c_ptr), value dx,  
    type(c_ptr), value x,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel )
```

49.46.1.92 gsl_multifit_test_gradient()

```
integer(c_int) function gsl_multifit_test_gradient (  
    type(c_ptr), value g,  
    real(c_double), value epsabs )
```

49.46.1.93 gsl_multifit_wlinear()

```
integer(c_int) function gsl_multifit_wlinear (  
    type(c_ptr), value x,  
    type(c_ptr), value w,  
    type(c_ptr), value y,  
    type(c_ptr), value c,  
    type(c_ptr), value cov,  
    real(c_double) chisq,  
    type(c_ptr), value work )
```

49.46.1.94 gsl_multifit_wlinear_svd()

```
integer(c_int) function gsl_multifit_wlinear_svd (  
    type(c_ptr), value x,  
    type(c_ptr), value w,  
    type(c_ptr), value y,  
    real(c_double), value tol,  
    integer(c_size_t) rank,  
    type(c_ptr), value c,  
    type(c_ptr), value cov,  
    real(c_double) chisq,  
    type(c_ptr), value work )
```

49.46.1.95 gsl_multifit_wlinear_tsvd()

```
integer(c_int) function gsl_multifit_wlinear_tsvd (
    type(c_ptr), value x,
    type(c_ptr), value w,
    type(c_ptr), value y,
    real(c_double), value tol,
    type(c_ptr), value c,
    type(c_ptr), value cov,
    real(c_double) chisq,
    integer(c_size_t) rank,
    type(c_ptr), value work )
```

49.46.1.96 gsl_multifit_wlinear_usvd()

```
integer(c_int) function gsl_multifit_wlinear_usvd (
    type(c_ptr), value x,
    type(c_ptr), value w,
    type(c_ptr), value y,
    real(c_double), value tol,
    integer(c_size_t) rank,
    type(c_ptr), value c,
    type(c_ptr), value cov,
    real(c_double) chisq,
    type(c_ptr), value work )
```

49.47 api/multilarge.finc File Reference**Functions/Subroutines**

- type(fgsl_multilarge_linear_workspace) function [fgsl_multilarge_linear_alloc](#) (T, p)
- subroutine [fgsl_multilarge_linear_free](#) (w)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_multilarge_linear_name](#) (w)
- integer(fgsl_int) function [fgsl_multilarge_linear_reset](#) (w)
- integer(fgsl_int) function [fgsl_multilarge_linear_accumulate](#) (X, y, w)
- integer(fgsl_int) function [fgsl_multilarge_linear_solve](#) (lambda, c, rnorm, snorm, w)
- integer(fgsl_int) function [fgsl_multilarge_linear_rcond](#) (rcond, w)
- integer(fgsl_int) function [fgsl_multilarge_linear_lcurve](#) (reg_param, rho, eta, w)
- real(fgsl_double) function, dimension(:,:), pointer [fgsl_multilarge_linear_matrix_ptr](#) (work)
- real(fgsl_double) function, dimension(:), pointer [fgsl_multilarge_linear_rhs_ptr](#) (work)
- integer(fgsl_int) function [fgsl_multilarge_linear_wstdform1](#) (L, X, w, y, Xs, ys, work)
- integer(fgsl_int) function [fgsl_multilarge_linear_stdform1](#) (L, X, y, Xs, ys, work)
- integer(fgsl_int) function [fgsl_multilarge_linear_l_decomp](#) (L, tau)
- integer(fgsl_int) function [fgsl_multilarge_linear_wstdform2](#) (LQR, Ltau, X, w, y, Xs, ys, work)
- integer(fgsl_int) function [fgsl_multilarge_linear_stdform2](#) (LQR, Ltau, X, y, Xs, ys, work)
- integer(fgsl_int) function [fgsl_multilarge_linear_genform1](#) (L, cs, c, work)
- integer(fgsl_int) function [fgsl_multilarge_linear_genform2](#) (LQR, Ltau, cs, c, work)

49.47.1 Function/Subroutine Documentation

49.47.1.1 fgsl_multilarge_linear_accumulate()

```
integer(fgsl_int) function fgsl_multilarge_linear_accumulate (
    type(fgsl_matrix), intent(inout) X,
    type(fgsl_vector), intent(inout) y,
    type(fgsl_multilarge_linear_workspace), intent(in) w )
```

49.47.1.2 fgsl_multilarge_linear_alloc()

```
type(fgsl_multilarge_linear_workspace) function fgsl_multilarge_linear_alloc (
    type(fgsl_multilarge_linear_type), intent(in) T,
    integer(fgsl_size_t), intent(in) p )
```

49.47.1.3 fgsl_multilarge_linear_free()

```
subroutine fgsl_multilarge_linear_free (
    type(fgsl_multilarge_linear_workspace), intent(inout) w )
```

49.47.1.4 fgsl_multilarge_linear_genform1()

```
integer(fgsl_int) function fgsl_multilarge_linear_genform1 (
    type(fgsl_vector), intent(in) L,
    type(fgsl_vector), intent(in) cs,
    type(fgsl_vector), intent(inout) c,
    type(fgsl_multilarge_linear_workspace), intent(inout) work )
```

49.47.1.5 fgsl_multilarge_linear_genform2()

```
integer(fgsl_int) function fgsl_multilarge_linear_genform2 (
    type(fgsl_matrix), intent(in) LQR,
    type(fgsl_vector), intent(in) Ltau,
    type(fgsl_vector), intent(in) cs,
    type(fgsl_vector), intent(inout) c,
    type(fgsl_multilarge_linear_workspace), intent(inout) work )
```


49.47.1.6 fgsl_multilarge_linear_l_decomp()

```
integer(fgsl_int) function fgsl_multilarge_linear_l_decomp (  
    type(fgsl_matrix), intent(inout) L,  
    type(fgsl_vector), intent(inout) tau )
```

49.47.1.7 fgsl_multilarge_linear_lcurve()

```
integer(fgsl_int) function fgsl_multilarge_linear_lcurve (  
    type(fgsl_vector), intent(inout) reg_param,  
    type(fgsl_vector), intent(inout) rho,  
    type(fgsl_vector), intent(inout) eta,  
    type(fgsl_multilarge_linear_workspace), intent(inout) w )
```

49.47.1.8 fgsl_multilarge_linear_matrix_ptr()

```
real(fgsl_double) function, dimension(:,,:), pointer fgsl_multilarge_linear_matrix_ptr (  
    type(fgsl_multilarge_linear_workspace), intent(in) work )
```

49.47.1.9 fgsl_multilarge_linear_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multilarge_linear_name (  
    type(fgsl_multilarge_linear_workspace), intent(in) w )
```

49.47.1.10 fgsl_multilarge_linear_rcond()

```
integer(fgsl_int) function fgsl_multilarge_linear_rcond (  
    real(c_double), intent(out) rcond,  
    type(fgsl_multilarge_linear_workspace), intent(inout) w )
```

49.47.1.11 fgsl_multilarge_linear_reset()

```
integer(fgsl_int) function fgsl_multilarge_linear_reset (  
    type(fgsl_multilarge_linear_workspace), intent(in) w )
```

49.47.1.12 fgsl_multilarge_linear_rhs_ptr()

```
real(fgsl_double) function, dimension(:), pointer fgsl_multilarge_linear_rhs_ptr (
    type(fgsl_multilarge_linear_workspace), intent(in) work )
```

49.47.1.13 fgsl_multilarge_linear_solve()

```
integer(fgsl_int) function fgsl_multilarge_linear_solve (
    real(c_double), intent(in) lambda,
    type(fgsl_vector), intent(inout) c,
    real(c_double), intent(out) rnorm,
    real(c_double), intent(out) snorm,
    type(fgsl_multilarge_linear_workspace), intent(inout) w )
```

49.47.1.14 fgsl_multilarge_linear_stdform1()

```
integer(fgsl_int) function fgsl_multilarge_linear_stdform1 (
    type(fgsl_vector), intent(in) L,
    type(fgsl_vector), intent(in) X,
    type(fgsl_vector), intent(in) y,
    type(fgsl_matrix), intent(inout) Xs,
    type(fgsl_vector), intent(inout) ys,
    type(fgsl_multilarge_linear_workspace), intent(inout) work )
```

49.47.1.15 fgsl_multilarge_linear_stdform2()

```
integer(fgsl_int) function fgsl_multilarge_linear_stdform2 (
    type(fgsl_matrix), intent(in) LQR,
    type(fgsl_vector), intent(in) Ltau,
    type(fgsl_matrix), intent(in) X,
    type(fgsl_vector), intent(in) y,
    type(fgsl_matrix), intent(inout) Xs,
    type(fgsl_vector), intent(inout) ys,
    type(fgsl_multilarge_linear_workspace), intent(inout) work )
```

49.47.1.16 fgsl_multilarge_linear_wstdform1()

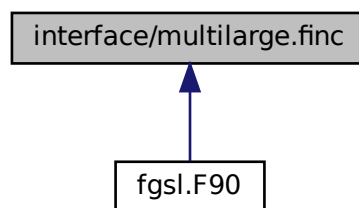
```
integer(fgsl_int) function fgsl_multilarge_linear_wstdform1 (
    type(fgsl_vector), intent(in) L,
    type(fgsl_vector), intent(in) X,
    type(fgsl_vector), intent(in) w,
    type(fgsl_vector), intent(in) y,
    type(fgsl_matrix), intent(inout) Xs,
    type(fgsl_vector), intent(inout) ys,
    type(fgsl_multilarge_linear_workspace), intent(inout) work )
```

49.47.1.17 fgsl_multilarge_linear_wstdform2()

```
integer(fgsl_int) function fgsl_multilarge_linear_wstdform2 (
    type(fgsl_matrix), intent(in) LQR,
    type(fgsl_vector), intent(in) Ltau,
    type(fgsl_matrix), intent(in) X,
    type(fgsl_vector), intent(in) w,
    type(fgsl_vector), intent(in) y,
    type(fgsl_matrix), intent(inout) Xs,
    type(fgsl_vector), intent(inout) ys,
    type(fgsl_multilarge_linear_workspace), intent(inout) work )
```

49.48 interface/multilarge.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_multilarge_linear_alloc](#) (T, p)
- subroutine [gsl_multilarge_linear_free](#) (w)
- type(c_ptr) function [gsl_multilarge_linear_name](#) (w)
- integer(c_int) function [gsl_multilarge_linear_reset](#) (w)
- integer(c_int) function [gsl_multilarge_linear_accumulate](#) (X, y, w)
- integer(c_int) function [gsl_multilarge_linear_solve](#) (lambda, c, rnorm, snorm, w)
- integer(c_int) function [gsl_multilarge_linear_rcond](#) (rcond, w)
- integer(c_int) function [gsl_multilarge_linear_lcurve](#) (reg_param, rho, eta, w)
- type(c_ptr) function [gsl_multilarge_linear_matrix_ptr](#) (work)
- type(c_ptr) function [gsl_multilarge_linear_rhs_ptr](#) (work)
- integer(c_int) function [gsl_multilarge_linear_wstdform1](#) (L, X, w, y, Xs, ys, work)
- integer(c_int) function [gsl_multilarge_linear_stdform1](#) (L, X, y, Xs, ys, work)
- integer(c_int) function [gsl_multilarge_linear_l_decomp](#) (L, tau)
- integer(c_int) function [gsl_multilarge_linear_wstdform2](#) (LQR, Ltau, X, w, y, Xs, ys, work)
- integer(c_int) function [gsl_multilarge_linear_stdform2](#) (LQR, Ltau, X, y, Xs, ys, work)
- integer(c_int) function [gsl_multilarge_linear_genform1](#) (L, cs, c, work)
- integer(c_int) function [gsl_multilarge_linear_genform2](#) (LQR, Ltau, cs, c, work)
- type(c_ptr) function [fgsl_aux_multilarge_linear_alloc](#) (i)

49.48.1 Function/Subroutine Documentation

49.48.1.1 fgsl_aux_multilarge_linear_alloc()

```
type(c_ptr) function fgsl_aux_multilarge_linear_alloc (
    integer(c_int), value i )
```

49.48.1.2 gsl_multilarge_linear_accumulate()

```
integer(c_int) function gsl_multilarge_linear_accumulate (
    type(c_ptr), value X,
    type(c_ptr), value y,
    type(c_ptr), value w )
```

49.48.1.3 gsl_multilarge_linear_alloc()

```
type(c_ptr) function gsl_multilarge_linear_alloc (
    type(c_ptr), value T,
    integer(c_size_t), value p )
```

49.48.1.4 gsl_multilarge_linear_free()

```
subroutine gsl_multilarge_linear_free (
    type(c_ptr), value w )
```

49.48.1.5 gsl_multilarge_linear_genform1()

```
integer(c_int) function gsl_multilarge_linear_genform1 (
    type(c_ptr), value L,
    type(c_ptr), value cs,
    type(c_ptr), value c,
    type(c_ptr), value work )
```

49.48.1.6 gsl_multilarge_linear_genform2()

```
integer(c_int) function gsl_multilarge_linear_genform2 (  
    type(c_ptr), value LQR,  
    type(c_ptr), value Ltau,  
    type(c_ptr), value cs,  
    type(c_ptr), value c,  
    type(c_ptr), value work )
```

49.48.1.7 gsl_multilarge_linear_l_decomp()

```
integer(c_int) function gsl_multilarge_linear_l_decomp (  
    type(c_ptr), value L,  
    type(c_ptr), value tau )
```

49.48.1.8 gsl_multilarge_linear_lcurve()

```
integer(c_int) function gsl_multilarge_linear_lcurve (  
    type(c_ptr), value reg_param,  
    type(c_ptr), value rho,  
    type(c_ptr), value eta,  
    type(c_ptr), value w )
```

49.48.1.9 gsl_multilarge_linear_matrix_ptr()

```
type(c_ptr) function gsl_multilarge_linear_matrix_ptr (  
    type(c_ptr), value work )
```

49.48.1.10 gsl_multilarge_linear_name()

```
type(c_ptr) function gsl_multilarge_linear_name (  
    type(c_ptr), value w )
```

49.48.1.11 gsl_multilarge_linear_rcond()

```
integer(c_int) function gsl_multilarge_linear_rcond (  
    real(c_double) rcond,  
    type(c_ptr), value w )
```

49.48.1.12 gsl_multilarge_linear_reset()

```
integer(c_int) function gsl_multilarge_linear_reset (  
    type(c_ptr), value w )
```

49.48.1.13 gsl_multilarge_linear_rhs_ptr()

```
type(c_ptr) function gsl_multilarge_linear_rhs_ptr (  
    type(c_ptr), value work )
```

49.48.1.14 gsl_multilarge_linear_solve()

```
integer(c_int) function gsl_multilarge_linear_solve (  
    real(c_double), value lambda,  
    type(c_ptr), value c,  
    real(c_double) rnorm,  
    real(c_double) snorm,  
    type(c_ptr), value w )
```

49.48.1.15 gsl_multilarge_linear_stdform1()

```
integer(c_int) function gsl_multilarge_linear_stdform1 (  
    type(c_ptr), value L,  
    type(c_ptr), value X,  
    type(c_ptr), value y,  
    type(c_ptr), value Xs,  
    type(c_ptr), value ys,  
    type(c_ptr), value work )
```

49.48.1.16 gsl_multilarge_linear_stdform2()

```
integer(c_int) function gsl_multilarge_linear_stdform2 (  
    type(c_ptr), value LQR,  
    type(c_ptr), value Ltau,  
    type(c_ptr), value X,  
    type(c_ptr), value y,  
    type(c_ptr), value Xs,  
    type(c_ptr), value ys,  
    type(c_ptr), value work )
```

49.48.1.17 gsl_multilarge_linear_wstdform1()

```
integer(c_int) function gsl_multilarge_linear_wstdform1 (
    type(c_ptr), value L,
    type(c_ptr), value X,
    type(c_ptr), value w,
    type(c_ptr), value y,
    type(c_ptr), value Xs,
    type(c_ptr), value ys,
    type(c_ptr), value work )
```

49.48.1.18 gsl_multilarge_linear_wstdform2()

```
integer(c_int) function gsl_multilarge_linear_wstdform2 (
    type(c_ptr), value LQR,
    type(c_ptr), value Ltau,
    type(c_ptr), value X,
    type(c_ptr), value w,
    type(c_ptr), value y,
    type(c_ptr), value Xs,
    type(c_ptr), value ys,
    type(c_ptr), value work )
```

49.49 api/multimin.finc File Reference**Functions/Subroutines**

- type(fgsl_multimin_function) function [fgsl_multimin_function_init](#) (func, ndim, params)
- type(fgsl_multimin_function_fdf) function [fgsl_multimin_function_fdf_init](#) (func, dfunc, fdfunc, ndim, params)
- subroutine [fgsl_multimin_function_free](#) (fun)
- subroutine [fgsl_multimin_function_fdf_free](#) (fun)
- type(fgsl_multimin_fminimizer) function [fgsl_multimin_fminimizer_alloc](#) (t, n)
- type(fgsl_multimin_fdfminimizer) function [fgsl_multimin_fdfminimizer_alloc](#) (t, n)
- subroutine [fgsl_multimin_fminimizer_free](#) (s)
- subroutine [fgsl_multimin_fdfminimizer_free](#) (s)
- integer(fgsl_int) function [fgsl_multimin_fminimizer_set](#) (s, f, x, step)
- integer(fgsl_int) function [fgsl_multimin_fdfminimizer_set](#) (s, fdf, x, step, tol)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_multimin_fminimizer_name](#) (s)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_multimin_fdfminimizer_name](#) (s)
- integer(fgsl_int) function [fgsl_multimin_fminimizer_iterate](#) (s)
- integer(fgsl_int) function [fgsl_multimin_fdfminimizer_iterate](#) (s)
- type(fgsl_vector) function [fgsl_multimin_fminimizer_x](#) (s)
- type(fgsl_vector) function [fgsl_multimin_fdfminimizer_x](#) (s)
- real(fgsl_double) function [fgsl_multimin_fminimizer_minimum](#) (s)
- real(fgsl_double) function [fgsl_multimin_fdfminimizer_minimum](#) (s)
- type(fgsl_vector) function [fgsl_multimin_fdfminimizer_gradient](#) (s)
- real(fgsl_double) function [fgsl_multimin_fminimizer_size](#) (s)
- integer(fgsl_int) function [fgsl_multimin_fdfminimizer_restart](#) (s)
- integer(fgsl_int) function [fgsl_multimin_test_gradient](#) (g, epsabs)
- integer(fgsl_int) function [fgsl_multimin_test_size](#) (size, epsabs)
- logical function [fgsl_multimin_fminimizer_status](#) (s)
- logical function [fgsl_multimin_fdfminimizer_status](#) (s)

49.49.1 Function/Subroutine Documentation

49.49.1.1 fgsl_multimin_fdfminimizer_alloc()

```
type(fgsl_multimin_fdfminimizer) function fgsl_multimin_fdfminimizer_alloc (
    type(fgsl_multimin_fdfminimizer_type), intent(in) t,
    integer(fgsl_size_t), intent(in) n )
```

49.49.1.2 fgsl_multimin_fdfminimizer_free()

```
subroutine fgsl_multimin_fdfminimizer_free (
    type(fgsl_multimin_fdfminimizer), intent(inout) s )
```

49.49.1.3 fgsl_multimin_fdfminimizer_gradient()

```
type(fgsl_vector) function fgsl_multimin_fdfminimizer_gradient (
    type(fgsl_multimin_fdfminimizer), intent(in) s )
```

49.49.1.4 fgsl_multimin_fdfminimizer_iterate()

```
integer(fgsl_int) function fgsl_multimin_fdfminimizer_iterate (
    type(fgsl_multimin_fdfminimizer), intent(in) s )
```

49.49.1.5 fgsl_multimin_fdfminimizer_minimum()

```
real(fgsl_double) function fgsl_multimin_fdfminimizer_minimum (
    type(fgsl_multimin_fdfminimizer), intent(in) s )
```

49.49.1.6 fgsl_multimin_fdfminimizer_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multimin_fdfminimizer_name (
    type(fgsl_multimin_fdfminimizer), intent(in) s )
```


49.49.1.7 fgsl_multimin_fdfminimizer_restart()

```
integer(fgsl_int) function fgsl_multimin_fdfminimizer_restart (  
    type(fgsl_multimin_fdfminimizer), intent(in) s )
```

49.49.1.8 fgsl_multimin_fdfminimizer_set()

```
integer(fgsl_int) function fgsl_multimin_fdfminimizer_set (  
    type(fgsl_multimin_fdfminimizer), intent(inout) s,  
    type(fgsl_multimin_function_fdf), intent(in) fdf,  
    type(fgsl_vector), intent(in) x,  
    real(fgsl_double), intent(in) step,  
    real(fgsl_double), intent(in) tol )
```

49.49.1.9 fgsl_multimin_fdfminimizer_status()

```
logical function fgsl_multimin_fdfminimizer_status (  
    type(fgsl_multimin_fdfminimizer), intent(in) s )
```

49.49.1.10 fgsl_multimin_fdfminimizer_x()

```
type(fgsl_vector) function fgsl_multimin_fdfminimizer_x (  
    type(fgsl_multimin_fdfminimizer), intent(in) s )
```

49.49.1.11 fgsl_multimin_fminimizer_alloc()

```
type(fgsl_multimin_fminimizer) function fgsl_multimin_fminimizer_alloc (  
    type(fgsl_multimin_fminimizer_type), intent(in) t,  
    integer(fgsl_size_t), intent(in) n )
```

49.49.1.12 fgsl_multimin_fminimizer_free()

```
subroutine fgsl_multimin_fminimizer_free (  
    type(fgsl_multimin_fminimizer), intent(inout) s )
```

49.49.1.13 fgsl_multimin_fminimizer_iterate()

```
integer(fgsl_int) function fgsl_multimin_fminimizer_iterate (  
    type(fgsl_multimin_fminimizer), intent(in) s )
```

49.49.1.14 fgsl_multimin_fminimizer_minimum()

```
real(fgsl_double) function fgsl_multimin_fminimizer_minimum (  
    type(fgsl_multimin_fminimizer), intent(in) s )
```

49.49.1.15 fgsl_multimin_fminimizer_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multimin_fminimizer_name (  
    type(fgsl_multimin_fminimizer), intent(in) s )
```

49.49.1.16 fgsl_multimin_fminimizer_set()

```
integer(fgsl_int) function fgsl_multimin_fminimizer_set (  
    type(fgsl_multimin_fminimizer), intent(inout) s,  
    type(fgsl_multimin_function), intent(in) f,  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(in) step )
```

49.49.1.17 fgsl_multimin_fminimizer_size()

```
real(fgsl_double) function fgsl_multimin_fminimizer_size (  
    type(fgsl_multimin_fminimizer), intent(in) s )
```

49.49.1.18 fgsl_multimin_fminimizer_status()

```
logical function fgsl_multimin_fminimizer_status (  
    type(fgsl_multimin_fminimizer), intent(in) s )
```

49.49.1.19 fgsl_multimin_fminimizer_x()

```
type(fgsl_vector) function fgsl_multimin_fminimizer_x (
    type(fgsl_multimin_fminimizer), intent(in) s )
```

49.49.1.20 fgsl_multimin_function_fdf_free()

```
subroutine fgsl_multimin_function_fdf_free (
    type(fgsl_multimin_function_fdf), intent(inout) fun )
```

49.49.1.21 fgsl_multimin_function_fdf_init()

```
type(fgsl_multimin_function_fdf) function fgsl_multimin_function_fdf_init (
    func,
    dfunc,
    fdfunc,
    integer(fgsl_size_t), intent(in) ndim,
    type(c_ptr), intent(in) params )
```

49.49.1.22 fgsl_multimin_function_free()

```
subroutine fgsl_multimin_function_free (
    type(fgsl_multimin_function), intent(inout) fun )
```

49.49.1.23 fgsl_multimin_function_init()

```
type(fgsl_multimin_function) function fgsl_multimin_function_init (
    func,
    integer(fgsl_size_t), intent(in) ndim,
    type(c_ptr), intent(in) params )
```

49.49.1.24 fgsl_multimin_test_gradient()

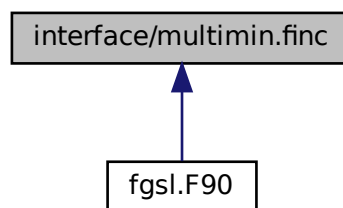
```
integer(fgsl_int) function fgsl_multimin_test_gradient (
    type(fgsl_vector), intent(in) g,
    real(fgsl_double), intent(in) epsabs )
```

49.49.1.25 fgsl_multimin_test_size()

```
integer(fgsl_int) function fgsl_multimin_test_size (
    real(fgsl_double), intent(in) size,
    real(fgsl_double), intent(in) epsabs )
```

49.50 interface/multimin.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_multimin_fminimizer_alloc](#) (t, n)
- type(c_ptr) function [gsl_multimin_fdfminimizer_alloc](#) (t, n)
- integer(c_int) function [gsl_multimin_fminimizer_set](#) (s, f, x, step)
- integer(c_int) function [gsl_multimin_fdfminimizer_set](#) (s, f, x, step, tol)
- subroutine [gsl_multimin_fminimizer_free](#) (s)
- subroutine [gsl_multimin_fdfminimizer_free](#) (s)
- type(c_ptr) function [gsl_multimin_fminimizer_name](#) (s)
- type(c_ptr) function [gsl_multimin_fdfminimizer_name](#) (s)
- integer(c_int) function [gsl_multimin_fminimizer_iterate](#) (s)
- integer(c_int) function [gsl_multimin_fdfminimizer_iterate](#) (s)
- type(c_ptr) function [gsl_multimin_fminimizer_x](#) (s)
- type(c_ptr) function [gsl_multimin_fdfminimizer_x](#) (s)
- real(c_double) function [gsl_multimin_fminimizer_minimum](#) (s)
- real(c_double) function [gsl_multimin_fdfminimizer_minimum](#) (s)
- type(c_ptr) function [gsl_multimin_fdfminimizer_gradient](#) (s)
- real(c_double) function [gsl_multimin_fminimizer_size](#) (s)
- integer(c_int) function [gsl_multimin_fdfminimizer_restart](#) (s)
- integer(c_int) function [gsl_multimin_test_gradient](#) (g, epsabs)
- integer(c_int) function [gsl_multimin_test_size](#) (size, epsabs)
- type(c_ptr) function [fgsl_multimin_function_cinit](#) (fp, ndim, params)
- type(c_ptr) function [fgsl_multimin_function_fdf_cinit](#) (fp, dfp, fdfp, ndim, params)
- subroutine [fgsl_multimin_function_cfree](#) (f)
- subroutine [fgsl_multimin_function_fdf_cfree](#) (f)
- type(c_ptr) function [fgsl_aux_multimin_fminimizer_alloc](#) (it)
- type(c_ptr) function [fgsl_aux_multimin_fdfminimizer_alloc](#) (it)

49.50.1 Function/Subroutine Documentation

49.50.1.1 fgsl_aux_multimin_fdfminimizer_alloc()

```
type(c_ptr) function fgsl_aux_multimin_fdfminimizer_alloc (  
    integer(c_int), value it )
```

49.50.1.2 fgsl_aux_multimin_fminimizer_alloc()

```
type(c_ptr) function fgsl_aux_multimin_fminimizer_alloc (  
    integer(c_int), value it )
```

49.50.1.3 fgsl_multimin_function_cfree()

```
subroutine fgsl_multimin_function_cfree (  
    type(c_ptr), value f )
```

49.50.1.4 fgsl_multimin_function_cinit()

```
type(c_ptr) function fgsl_multimin_function_cinit (  
    type(c_funptr), value fp,  
    integer(c_size_t), value ndim,  
    type(c_ptr), value params )
```

49.50.1.5 fgsl_multimin_function_fdf_cfree()

```
subroutine fgsl_multimin_function_fdf_cfree (  
    type(c_ptr), value f )
```

49.50.1.6 fgsl_multimin_function_fdf_cinit()

```
type(c_ptr) function fgsl_multimin_function_fdf_cinit (  
    type(c_funptr), value fp,  
    type(c_funptr), value dfp,  
    type(c_funptr), value fdfp,  
    integer(c_size_t), value ndim,  
    type(c_ptr), value params )
```

49.50.1.7 gsl_multimin_fdfminimizer_alloc()

```
type(c_ptr) function gsl_multimin_fdfminimizer_alloc (
    type(c_ptr), value t,
    integer(c_size_t), value n )
```

49.50.1.8 gsl_multimin_fdfminimizer_free()

```
subroutine gsl_multimin_fdfminimizer_free (
    type(c_ptr), value s )
```

49.50.1.9 gsl_multimin_fdfminimizer_gradient()

```
type(c_ptr) function gsl_multimin_fdfminimizer_gradient (
    type(c_ptr), value s )
```

49.50.1.10 gsl_multimin_fdfminimizer_iterate()

```
integer(c_int) function gsl_multimin_fdfminimizer_iterate (
    type(c_ptr), value s )
```

49.50.1.11 gsl_multimin_fdfminimizer_minimum()

```
real(c_double) function gsl_multimin_fdfminimizer_minimum (
    type(c_ptr), value s )
```

49.50.1.12 gsl_multimin_fdfminimizer_name()

```
type(c_ptr) function gsl_multimin_fdfminimizer_name (
    type(c_ptr), value s )
```

49.50.1.13 gsl_multimin_fdfminimizer_restart()

```
integer(c_int) function gsl_multimin_fdfminimizer_restart (
    type(c_ptr), value s )
```

49.50.1.14 gsl_multimin_fdfminimizer_set()

```
integer(c_int) function gsl_multimin_fdfminimizer_set (  
    type(c_ptr), value s,  
    type(c_ptr), value f,  
    type(c_ptr), value x,  
    real(c_double), value step,  
    real(c_double), value tol )
```

49.50.1.15 gsl_multimin_fdfminimizer_x()

```
type(c_ptr) function gsl_multimin_fdfminimizer_x (  
    type(c_ptr), value s )
```

49.50.1.16 gsl_multimin_fminimizer_alloc()

```
type(c_ptr) function gsl_multimin_fminimizer_alloc (  
    type(c_ptr), value t,  
    integer(c_size_t), value n )
```

49.50.1.17 gsl_multimin_fminimizer_free()

```
subroutine gsl_multimin_fminimizer_free (  
    type(c_ptr), value s )
```

49.50.1.18 gsl_multimin_fminimizer_iterate()

```
integer(c_int) function gsl_multimin_fminimizer_iterate (  
    type(c_ptr), value s )
```

49.50.1.19 gsl_multimin_fminimizer_minimum()

```
real(c_double) function gsl_multimin_fminimizer_minimum (  
    type(c_ptr), value s )
```

49.50.1.20 gsl_multimin_fminimizer_name()

```
type(c_ptr) function gsl_multimin_fminimizer_name (  
    type(c_ptr), value s )
```

49.50.1.21 gsl_multimin_fminimizer_set()

```
integer(c_int) function gsl_multimin_fminimizer_set (  
    type(c_ptr), value s,  
    type(c_ptr), value f,  
    type(c_ptr), value x,  
    type(c_ptr), value step )
```

49.50.1.22 gsl_multimin_fminimizer_size()

```
real(c_double) function gsl_multimin_fminimizer_size (  
    type(c_ptr), value s )
```

49.50.1.23 gsl_multimin_fminimizer_x()

```
type(c_ptr) function gsl_multimin_fminimizer_x (  
    type(c_ptr), value s )
```

49.50.1.24 gsl_multimin_test_gradient()

```
integer(c_int) function gsl_multimin_test_gradient (  
    type(c_ptr), value g,  
    real(c_double), value epsabs )
```

49.50.1.25 gsl_multimin_test_size()

```
integer(c_int) function gsl_multimin_test_size (  
    real(c_double), value size,  
    real(c_double), value epsabs )
```


49.51 api/multiroots.finc File Reference

Functions/Subroutines

- type(fgsl_multiroot_function) function [fgsl_multiroot_function_init](#) (func, ndim, params)
- type(fgsl_multiroot_function_fdf) function [fgsl_multiroot_function_fdf_init](#) (func, dfunc, fdfunc, ndim, params)
- subroutine [fgsl_multiroot_function_free](#) (fun)
- subroutine [fgsl_multiroot_function_fdf_free](#) (fun)
- type(fgsl_multiroot_fsolver) function [fgsl_multiroot_fsolver_alloc](#) (t, n)
- type(fgsl_multiroot_fdfsolver) function [fgsl_multiroot_fdfsolver_alloc](#) (t, n)
- subroutine [fgsl_multiroot_fsolver_free](#) (s)
- subroutine [fgsl_multiroot_fdfsolver_free](#) (s)
- integer(fgsl_int) function [fgsl_multiroot_fsolver_set](#) (s, f, x)
- integer(fgsl_int) function [fgsl_multiroot_fdfsolver_set](#) (s, fdf, x)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_multiroot_fsolver_name](#) (s)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_multiroot_fdfsolver_name](#) (s)
- integer(fgsl_int) function [fgsl_multiroot_fsolver_iterate](#) (s)
- integer(fgsl_int) function [fgsl_multiroot_fdfsolver_iterate](#) (s)
- type(fgsl_vector) function [fgsl_multiroot_fsolver_root](#) (s)
- type(fgsl_vector) function [fgsl_multiroot_fdfsolver_root](#) (s)
- type(fgsl_vector) function [fgsl_multiroot_fsolver_f](#) (s)
- type(fgsl_vector) function [fgsl_multiroot_fdfsolver_f](#) (s)
- type(fgsl_vector) function [fgsl_multiroot_fsolver_dx](#) (s)
- type(fgsl_vector) function [fgsl_multiroot_fdfsolver_dx](#) (s)
- integer(fgsl_int) function [fgsl_multiroot_test_delta](#) (dx, x, epsabs, epsrel)
- integer(fgsl_int) function [fgsl_multiroot_test_residual](#) (f, epsabs)
- logical function [fgsl_multiroot_fsolver_status](#) (s)
- logical function [fgsl_multiroot_fdfsolver_status](#) (s)

49.51.1 Function/Subroutine Documentation

49.51.1.1 fgsl_multiroot_fdfsolver_alloc()

```
type(fgsl_multiroot_fdfsolver) function fgsl_multiroot_fdfsolver_alloc (
    type(fgsl_multiroot_fdfsolver_type), intent(in) t,
    integer(fgsl_size_t), intent(in) n )
```

49.51.1.2 fgsl_multiroot_fdfsolver_dx()

```
type(fgsl_vector) function fgsl_multiroot_fdfsolver_dx (
    type(fgsl_multiroot_fdfsolver), intent(in) s )
```

49.51.1.3 fgsl_multiroot_fdfsolver_f()

```
type(fgsl_vector) function fgsl_multiroot_fdfsolver_f (  
    type(fgsl_multiroot_fdfsolver), intent(in) s )
```

49.51.1.4 fgsl_multiroot_fdfsolver_free()

```
subroutine fgsl_multiroot_fdfsolver_free (  
    type(fgsl_multiroot_fdfsolver), intent(inout) s )
```

49.51.1.5 fgsl_multiroot_fdfsolver_iterate()

```
integer(fgsl_int) function fgsl_multiroot_fdfsolver_iterate (  
    type(fgsl_multiroot_fdfsolver), intent(in) s )
```

49.51.1.6 fgsl_multiroot_fdfsolver_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multiroot_fdfsolver_name (  
    type(fgsl_multiroot_fdfsolver), intent(in) s )
```

49.51.1.7 fgsl_multiroot_fdfsolver_root()

```
type(fgsl_vector) function fgsl_multiroot_fdfsolver_root (  
    type(fgsl_multiroot_fdfsolver), intent(in) s )
```

49.51.1.8 fgsl_multiroot_fdfsolver_set()

```
integer(fgsl_int) function fgsl_multiroot_fdfsolver_set (  
    type(fgsl_multiroot_fdfsolver), intent(inout) s,  
    type(fgsl_multiroot_function_fdf), intent(in) fdf,  
    type(fgsl_vector), intent(in) x )
```

49.51.1.9 fgsl_multiroot_fdfsolver_status()

```
logical function fgsl_multiroot_fdfsolver_status (  
    type(fgsl_multiroot_fdfsolver), intent(in) s )
```

49.51.1.10 fgsl_multiroot_fsolver_alloc()

```
type(fgsl_multiroot_fsolver) function fgsl_multiroot_fsolver_alloc (
    type(fgsl_multiroot_fsolver_type), intent(in) t,
    integer(fgsl_size_t), intent(in) n )
```

49.51.1.11 fgsl_multiroot_fsolver_dx()

```
type(fgsl_vector) function fgsl_multiroot_fsolver_dx (
    type(fgsl_multiroot_fsolver), intent(in) s )
```

49.51.1.12 fgsl_multiroot_fsolver_f()

```
type(fgsl_vector) function fgsl_multiroot_fsolver_f (
    type(fgsl_multiroot_fsolver), intent(in) s )
```

49.51.1.13 fgsl_multiroot_fsolver_free()

```
subroutine fgsl_multiroot_fsolver_free (
    type(fgsl_multiroot_fsolver), intent(inout) s )
```

49.51.1.14 fgsl_multiroot_fsolver_iterate()

```
integer(fgsl_int) function fgsl_multiroot_fsolver_iterate (
    type(fgsl_multiroot_fsolver), intent(in) s )
```

49.51.1.15 fgsl_multiroot_fsolver_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multiroot_fsolver_name (
    type(fgsl_multiroot_fsolver), intent(in) s )
```

49.51.1.16 fgsl_multiroot_fsolver_root()

```
type(fgsl_vector) function fgsl_multiroot_fsolver_root (
    type(fgsl_multiroot_fsolver), intent(in) s )
```

49.51.1.17 fgsl_multiroot_fsolver_set()

```
integer(fgsl_int) function fgsl_multiroot_fsolver_set (
    type(fgsl_multiroot_fsolver), intent(inout) s,
    type(fgsl_multiroot_function), intent(in) f,
    type(fgsl_vector), intent(in) x )
```

49.51.1.18 fgsl_multiroot_fsolver_status()

```
logical function fgsl_multiroot_fsolver_status (
    type(fgsl_multiroot_fsolver), intent(in) s )
```

49.51.1.19 fgsl_multiroot_function_fdf_free()

```
subroutine fgsl_multiroot_function_fdf_free (
    type(fgsl_multiroot_function_fdf), intent(inout) fun )
```

49.51.1.20 fgsl_multiroot_function_fdf_init()

```
type(fgsl_multiroot_function_fdf) function fgsl_multiroot_function_fdf_init (
    func,
    dfunc,
    fdfunc,
    integer(fgsl_size_t), intent(in) ndim,
    type(c_ptr), intent(in) params )
```

49.51.1.21 fgsl_multiroot_function_free()

```
subroutine fgsl_multiroot_function_free (
    type(fgsl_multiroot_function), intent(inout) fun )
```

49.51.1.22 fgsl_multiroot_function_init()

```
type(fgsl_multiroot_function) function fgsl_multiroot_function_init (
    func,
    integer(fgsl_size_t), intent(in) ndim,
    type(c_ptr), intent(in) params )
```

49.51.1.23 fgsl_multiroot_test_delta()

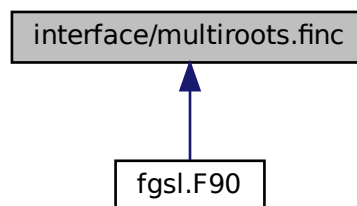
```
integer(fgsl_int) function fgsl_multiroot_test_delta (
    type(fgsl_vector), intent(in) dx,
    type(fgsl_vector), intent(in) x,
    real(fgsl_double), intent(in) epsabs,
    real(fgsl_double), intent(in) epsrel )
```

49.51.1.24 fgsl_multiroot_test_residual()

```
integer(fgsl_int) function fgsl_multiroot_test_residual (
    type(fgsl_vector), intent(in) f,
    real(fgsl_double), intent(in) epsabs )
```

49.52 interface/multiroots.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- type(c_ptr) function [gsl_multiroot_fsolver_alloc](#) (t, n)
- type(c_ptr) function [gsl_multiroot_fdfsolver_alloc](#) (t, n)
- integer(c_int) function [gsl_multiroot_fsolver_set](#) (s, f, x)
- integer(c_int) function [gsl_multiroot_fdfsolver_set](#) (s, f, x)
- subroutine [gsl_multiroot_fsolver_free](#) (s)
- subroutine [gsl_multiroot_fdfsolver_free](#) (s)
- type(c_ptr) function [gsl_multiroot_fsolver_name](#) (s)
- type(c_ptr) function [gsl_multiroot_fdfsolver_name](#) (s)
- integer(c_int) function [gsl_multiroot_fsolver_iterate](#) (s)
- integer(c_int) function [gsl_multiroot_fdfsolver_iterate](#) (s)
- type(c_ptr) function [gsl_multiroot_fsolver_root](#) (s)
- type(c_ptr) function [gsl_multiroot_fsolver_f](#) (s)
- type(c_ptr) function [gsl_multiroot_fsolver_dx](#) (s)
- type(c_ptr) function [gsl_multiroot_fdfsolver_root](#) (s)

- type(c_ptr) function [gsl_multiroot_fdfsolver_f](#) (s)
- type(c_ptr) function [gsl_multiroot_fdfsolver_dx](#) (s)
- integer(c_int) function [gsl_multiroot_test_delta](#) (dx, x, epsabs, epsrel)
- integer(c_int) function [gsl_multiroot_test_residual](#) (f, epsabs)
- type(c_ptr) function [fgsl_multiroot_function_cinit](#) (fp, ndim, params)
- type(c_ptr) function [fgsl_multiroot_function_fdf_cinit](#) (fp, dfp, fdfp, ndim, params)
- subroutine [fgsl_multiroot_function_cfree](#) (f)
- subroutine [fgsl_multiroot_function_fdf_cfree](#) (f)
- type(c_ptr) function [fgsl_aux_multiroot_fsolver_alloc](#) (it)
- type(c_ptr) function [fgsl_aux_multiroot_fdfsolver_alloc](#) (it)

49.52.1 Function/Subroutine Documentation

49.52.1.1 fgsl_aux_multiroot_fdfsolver_alloc()

```
type(c_ptr) function fgsl_aux_multiroot_fdfsolver_alloc (
    integer(c_int), value it )
```

49.52.1.2 fgsl_aux_multiroot_fsolver_alloc()

```
type(c_ptr) function fgsl_aux_multiroot_fsolver_alloc (
    integer(c_int), value it )
```

49.52.1.3 fgsl_multiroot_function_cfree()

```
subroutine fgsl_multiroot_function_cfree (
    type(c_ptr), value f )
```

49.52.1.4 fgsl_multiroot_function_cinit()

```
type(c_ptr) function fgsl_multiroot_function_cinit (
    type(c_funptr), value fp,
    integer(c_size_t), value ndim,
    type(c_ptr), value params )
```

49.52.1.5 fgsl_multiroot_function_fdf_cfree()

```
subroutine fgsl_multiroot_function_fdf_cfree (
    type(c_ptr), value f )
```

49.52.1.6 fgsl_multiroot_function_fdf_cinit()

```
type(c_ptr) function fgsl_multiroot_function_fdf_cinit (
    type(c_funptr), value fp,
    type(c_funptr), value dfp,
    type(c_funptr), value fdfp,
    integer(c_size_t), value ndim,
    type(c_ptr), value params )
```

49.52.1.7 gsl_multiroot_fdfsolver_alloc()

```
type(c_ptr) function gsl_multiroot_fdfsolver_alloc (
    type(c_ptr), value t,
    integer(c_size_t), value n )
```

49.52.1.8 gsl_multiroot_fdfsolver_dx()

```
type(c_ptr) function gsl_multiroot_fdfsolver_dx (
    type(c_ptr), value s )
```

49.52.1.9 gsl_multiroot_fdfsolver_f()

```
type(c_ptr) function gsl_multiroot_fdfsolver_f (
    type(c_ptr), value s )
```

49.52.1.10 gsl_multiroot_fdfsolver_free()

```
subroutine gsl_multiroot_fdfsolver_free (
    type(c_ptr), value s )
```

49.52.1.11 gsl_multiroot_fdfsolver_iterate()

```
integer(c_int) function gsl_multiroot_fdfsolver_iterate (  
    type(c_ptr), value s )
```

49.52.1.12 gsl_multiroot_fdfsolver_name()

```
type(c_ptr) function gsl_multiroot_fdfsolver_name (  
    type(c_ptr), value s )
```

49.52.1.13 gsl_multiroot_fdfsolver_root()

```
type(c_ptr) function gsl_multiroot_fdfsolver_root (  
    type(c_ptr), value s )
```

49.52.1.14 gsl_multiroot_fdfsolver_set()

```
integer(c_int) function gsl_multiroot_fdfsolver_set (  
    type(c_ptr), value s,  
    type(c_ptr), value f,  
    type(c_ptr), value x )
```

49.52.1.15 gsl_multiroot_fsolver_alloc()

```
type(c_ptr) function gsl_multiroot_fsolver_alloc (  
    type(c_ptr), value t,  
    integer(c_size_t), value n )
```

49.52.1.16 gsl_multiroot_fsolver_dx()

```
type(c_ptr) function gsl_multiroot_fsolver_dx (  
    type(c_ptr), value s )
```


49.52.1.17 gsl_multiroot_fsolver_f()

```
type(c_ptr) function gsl_multiroot_fsolver_f (  
    type(c_ptr), value s )
```

49.52.1.18 gsl_multiroot_fsolver_free()

```
subroutine gsl_multiroot_fsolver_free (  
    type(c_ptr), value s )
```

49.52.1.19 gsl_multiroot_fsolver_iterate()

```
integer(c_int) function gsl_multiroot_fsolver_iterate (  
    type(c_ptr), value s )
```

49.52.1.20 gsl_multiroot_fsolver_name()

```
type(c_ptr) function gsl_multiroot_fsolver_name (  
    type(c_ptr), value s )
```

49.52.1.21 gsl_multiroot_fsolver_root()

```
type(c_ptr) function gsl_multiroot_fsolver_root (  
    type(c_ptr), value s )
```

49.52.1.22 gsl_multiroot_fsolver_set()

```
integer(c_int) function gsl_multiroot_fsolver_set (  
    type(c_ptr), value s,  
    type(c_ptr), value f,  
    type(c_ptr), value x )
```

49.52.1.23 `gsl_multirroot_test_delta()`

```
integer(c_int) function gsl_multirroot_test_delta (
    type(c_ptr), value dx,
    type(c_ptr), value x,
    real(c_double), value epsabs,
    real(c_double), value epsrel )
```

49.52.1.24 `gsl_multirroot_test_residual()`

```
integer(c_int) function gsl_multirroot_test_residual (
    type(c_ptr), value f,
    real(c_double), value epsabs )
```

49.53 `api/nlfit.finc` File Reference**Functions/Subroutines**

- `type(fgsl_multifit_nlinear_type)` function [fgsl_multifit_nlinear_setup](#) (s)
- `type(fgsl_multilarge_nlinear_type)` function [fgsl_multilarge_nlinear_setup](#) (s)
- `type(fgsl_multifit_nlinear_workspace)` function [fgsl_multifit_nlinear_alloc](#) (t, params, n, p)
- `type(fgsl_multilarge_nlinear_workspace)` function [fgsl_multilarge_nlinear_alloc](#) (t, params, n, p)
- `type(fgsl_multifit_nlinear_parameters)` function [fgsl_multifit_nlinear_default_parameters](#) ()
- `type(fgsl_multilarge_nlinear_parameters)` function [fgsl_multilarge_nlinear_default_parameters](#) ()
- `integer(fgsl_int)` function [fgsl_multifit_nlinear_init](#) (x, fdf, w)
- `integer(fgsl_int)` function [fgsl_multifit_nlinear_winit](#) (x, wts, fdf, w)
- `integer(fgsl_int)` function [fgsl_multilarge_nlinear_init](#) (x, fdf, w)
- `integer(fgsl_int)` function [fgsl_multilarge_nlinear_winit](#) (x, wts, fdf, w)
- subroutine [fgsl_multifit_nlinear_free](#) (w)
- subroutine [fgsl_multilarge_nlinear_free](#) (w)
- `character(kind=fgsl_char, len=fgsl_strmax)` function [fgsl_multifit_nlinear_name](#) (w)
- `character(kind=fgsl_char, len=fgsl_strmax)` function [fgsl_multilarge_nlinear_name](#) (w)
- `character(kind=fgsl_char, len=fgsl_strmax)` function [fgsl_multifit_nlinear_trs_name](#) (w)
- `character(kind=fgsl_char, len=fgsl_strmax)` function [fgsl_multilarge_nlinear_trs_name](#) (w)
- `integer(fgsl_int)` function [fgsl_multifit_nlinear_iterate](#) (w)
- `integer(fgsl_int)` function [fgsl_multilarge_nlinear_iterate](#) (w)
- `type(fgsl_vector)` function [fgsl_multifit_nlinear_position](#) (w)
- `type(fgsl_vector)` function [fgsl_multilarge_nlinear_position](#) (w)
- `type(fgsl_vector)` function [fgsl_multifit_nlinear_residual](#) (w)
- `type(fgsl_vector)` function [fgsl_multilarge_nlinear_residual](#) (w)
- `type(fgsl_matrix)` function [fgsl_multifit_nlinear_jac](#) (w)
- `integer(fgsl_size_t)` function [fgsl_multifit_nlinear_niter](#) (w)
- `integer(fgsl_size_t)` function [fgsl_multilarge_nlinear_niter](#) (w)
- `integer(fgsl_int)` function [fgsl_multifit_nlinear_rcond](#) (rcond, w)
- `integer(fgsl_int)` function [fgsl_multilarge_nlinear_rcond](#) (rcond, w)
- `integer(fgsl_int)` function [fgsl_multifit_nlinear_test](#) (xtol, gtol, ftol, info, w)
- `integer(fgsl_int)` function [fgsl_multilarge_nlinear_test](#) (xtol, gtol, ftol, info, w)
- `integer(fgsl_int)` function [fgsl_multifit_nlinear_driver](#) (maxiter, xtol, gtol, ftol, callback, callback_params, info, w)

- integer(fgsl_int) function [fgsl_multilarge_nlinear_driver](#) (maxiter, xtol, gtol, ftol, callback, callback_params, info, w)
- integer(fgsl_int) function [fgsl_multifit_nlinear_covar](#) (j, epsrel, covar)
- integer(fgsl_int) function [fgsl_multilarge_nlinear_covar](#) (covar, w)
- type(fgsl_multifit_nlinear_fdf) function [fgsl_multifit_nlinear_fdf_init](#) (ndim, p, params, func, dfunc, fvv)
- subroutine [fgsl_multifit_nlinear_fdf_get](#) (fdf, func, dfunc, fvv, n, p, params, nevalf, nevaldf, nevalfvv)
- subroutine [fgsl_multifit_nlinear_fdf_free](#) (fun)
- logical function [fgsl_multifit_nlinear_status](#) (s)
- subroutine [fgsl_multifit_nlinear_parameters_set](#) (params, trs, scale, solver, fdtype, factor_up, factor_down, avmax, h_df, h_fvv)
- type(fgsl_multilarge_nlinear_fdf) function [fgsl_multilarge_nlinear_fdf_init](#) (ndim, p, params, func, dfunc, fvv)
- subroutine [fgsl_multilarge_nlinear_fdf_free](#) (fun)
- subroutine [fgsl_multilarge_nlinear_fdf_get](#) (fdf, func, dfunc, fvv, n, p, params, nevalf, nevaldfu, nevaldf2, nevalfvv)
- subroutine [fgsl_multilarge_nlinear_parameters_set](#) (params, trs, scale, solver, fdtype, factor_up, factor_down, avmax, h_df, h_fvv, max_iter, tol)

49.53.1 Function/Subroutine Documentation

49.53.1.1 fgsl_multifit_nlinear_alloc()

```
type(fgsl_multifit_nlinear_workspace) function fgsl_multifit_nlinear_alloc (
    type(fgsl_multifit_nlinear_type), intent(in) t,
    type(fgsl_multifit_nlinear_parameters), intent(in) params,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) p )
```

49.53.1.2 fgsl_multifit_nlinear_covar()

```
integer(fgsl_int) function fgsl_multifit_nlinear_covar (
    type(fgsl_matrix), intent(in) j,
    real(fgsl_double), intent(in) epsrel,
    type(fgsl_matrix), intent(inout) covar )
```

49.53.1.3 fgsl_multifit_nlinear_default_parameters()

```
type(fgsl_multifit_nlinear_parameters) function fgsl_multifit_nlinear_default_parameters
```

49.53.1.4 fgsl_multifit_nlinear_driver()

```
integer(fgsl_int) function fgsl_multifit_nlinear_driver (
    integer(fgsl_size_t), intent(in) maxiter,
    real(fgsl_double), intent(in) xtol,
    real(fgsl_double), intent(in) gtol,
    real(fgsl_double), intent(in) ftol,
    procedure(fgsl_nlinear_callback), optional callback,
    type(c_ptr), value callback_params,
    integer(fgsl_int), intent(inout) info,
    type(fgsl_multifit_nlinear_workspace), intent(in) w )
```

49.53.1.5 fgsl_multifit_nlinear_fdf_free()

```
subroutine fgsl_multifit_nlinear_fdf_free (
    type(fgsl_multifit_nlinear_fdf), intent(inout) fun )
```

49.53.1.6 fgsl_multifit_nlinear_fdf_get()

```
subroutine fgsl_multifit_nlinear_fdf_get (
    type(fgsl_multifit_nlinear_fdf), intent(in) fdf,
    procedure(fgsl_nlinear_fdf_func), optional, pointer func,
    procedure(fgsl_nlinear_fdf_dfunc), optional, pointer dfunc,
    procedure(fgsl_nlinear_fdf_fvv), optional, pointer fvv,
    integer(fgsl_size_t), intent(out), optional n,
    integer(fgsl_size_t), intent(out), optional p,
    type(c_ptr), intent(out), optional params,
    integer(fgsl_size_t), intent(out), optional nevalf,
    integer(fgsl_size_t), intent(out), optional nevaldf,
    integer(fgsl_size_t), intent(out), optional nevalfvv )
```

49.53.1.7 fgsl_multifit_nlinear_fdf_init()

```
type(fgsl_multifit_nlinear_fdf) function fgsl_multifit_nlinear_fdf_init (
    integer(fgsl_size_t), intent(in) ndim,
    integer(fgsl_size_t), intent(in) p,
    type(c_ptr), intent(in) params,
    procedure(fgsl_nlinear_fdf_func), optional func,
    procedure(fgsl_nlinear_fdf_dfunc), optional dfunc,
    procedure(fgsl_nlinear_fdf_fvv), optional fvv )
```

49.53.1.8 fgsl_multifit_nlinear_free()

```
subroutine fgsl_multifit_nlinear_free (  
    type(fgsl_multifit_nlinear_workspace), intent(inout) w )
```

49.53.1.9 fgsl_multifit_nlinear_init()

```
integer(fgsl_int) function fgsl_multifit_nlinear_init (  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_multifit_nlinear_fdf), intent(in) fdf,  
    type(fgsl_multifit_nlinear_workspace), intent(inout) w )
```

49.53.1.10 fgsl_multifit_nlinear_iterate()

```
integer(fgsl_int) function fgsl_multifit_nlinear_iterate (  
    type(fgsl_multifit_nlinear_workspace), intent(inout) w )
```

49.53.1.11 fgsl_multifit_nlinear_jac()

```
type(fgsl_matrix) function fgsl_multifit_nlinear_jac (  
    type(fgsl_multifit_nlinear_workspace), intent(in) w )
```

49.53.1.12 fgsl_multifit_nlinear_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multifit_nlinear_name (  
    type(fgsl_multifit_nlinear_workspace), intent(in) w )
```

49.53.1.13 fgsl_multifit_nlinear_niter()

```
integer(fgsl_size_t) function fgsl_multifit_nlinear_niter (  
    type(fgsl_multifit_nlinear_workspace), intent(in) w )
```

49.53.1.14 fgsl_multifit_nlinear_parameters_set()

```

subroutine fgsl_multifit_nlinear_parameters_set (
    type(fgsl_multifit_nlinear_parameters) params,
    type(fgsl_multifit_nlinear_trs), optional trs,
    type(fgsl_multifit_nlinear_scale), optional scale,
    type(fgsl_multifit_nlinear_solver), optional solver,
    integer(fgsl_int), optional fdtype,
    real(c_double), optional factor_up,
    real(c_double), optional factor_down,
    real(c_double), optional avmax,
    real(c_double), optional h_df,
    real(c_double), optional h_fvv )

```

49.53.1.15 fgsl_multifit_nlinear_position()

```

type(fgsl_vector) function fgsl_multifit_nlinear_position (
    type(fgsl_multifit_nlinear_workspace), intent(in) w )

```

49.53.1.16 fgsl_multifit_nlinear_rcond()

```

integer(fgsl_int) function fgsl_multifit_nlinear_rcond (
    real(fgsl_double), intent(inout) rcond,
    type(fgsl_multifit_nlinear_workspace), intent(in) w )

```

49.53.1.17 fgsl_multifit_nlinear_residual()

```

type(fgsl_vector) function fgsl_multifit_nlinear_residual (
    type(fgsl_multifit_nlinear_workspace), intent(in) w )

```

49.53.1.18 fgsl_multifit_nlinear_setup()

```

type(fgsl_multifit_nlinear_type) function fgsl_multifit_nlinear_setup (
    character(kind=fgsl_char, len=*) s )

```

49.53.1.19 fgsl_multifit_nlinear_status()

```

logical function fgsl_multifit_nlinear_status (
    type(fgsl_multifit_nlinear_workspace), intent(in) s )

```

49.53.1.20 fgsl_multifit_nlinear_test()

```
integer(fgsl_int) function fgsl_multifit_nlinear_test (  
    real(fgsl_double), intent(in) xtol,  
    real(fgsl_double), intent(in) gtol,  
    real(fgsl_double), intent(in) ftol,  
    integer(fgsl_int), intent(inout) info,  
    type(fgsl_multifit_nlinear_workspace), intent(in) w )
```

49.53.1.21 fgsl_multifit_nlinear_trs_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multifit_nlinear_trs_name (  
    type(fgsl_multifit_nlinear_workspace), intent(in) w )
```

49.53.1.22 fgsl_multifit_nlinear_winit()

```
integer(fgsl_int) function fgsl_multifit_nlinear_winit (  
    type(fgsl_vector), intent(in) x,  
    type(fgsl_vector), intent(in) wts,  
    type(fgsl_multifit_nlinear_fdf), intent(in) fdf,  
    type(fgsl_multifit_nlinear_workspace), intent(inout) w )
```

49.53.1.23 fgsl_multilarge_nlinear_alloc()

```
type(fgsl_multilarge_nlinear_workspace) function fgsl_multilarge_nlinear_alloc (  
    type(fgsl_multilarge_nlinear_type), intent(in) t,  
    type(fgsl_multilarge_nlinear_parameters), intent(in) params,  
    integer(fgsl_size_t), intent(in) n,  
    integer(fgsl_size_t), intent(in) p )
```

49.53.1.24 fgsl_multilarge_nlinear_covar()

```
integer(fgsl_int) function fgsl_multilarge_nlinear_covar (  
    type(fgsl_matrix), intent(inout) covar,  
    type(fgsl_multilarge_nlinear_workspace), intent(in) w )
```

49.53.1.25 fgsl_multilarge_nlinear_default_parameters()

```
type(fgsl_multilarge_nlinear_parameters) function fgsl_multilarge_nlinear_default_parameters
```

49.53.1.26 fgsl_multilarge_nlinear_driver()

```
integer(fgsl_int) function fgsl_multilarge_nlinear_driver (
    integer(fgsl_size_t), intent(in) maxiter,
    real(fgsl_double), intent(in) xtol,
    real(fgsl_double), intent(in) gtol,
    real(fgsl_double), intent(in) ftol,
    procedure(fgsl_nlinear_callback), optional callback,
    type(c_ptr), value callback_params,
    integer(fgsl_int), intent(inout) info,
    type(fgsl_multilarge_nlinear_workspace), intent(in) w )
```

49.53.1.27 fgsl_multilarge_nlinear_fdf_free()

```
subroutine fgsl_multilarge_nlinear_fdf_free (
    type(fgsl_multilarge_nlinear_fdf), intent(inout) fun )
```

49.53.1.28 fgsl_multilarge_nlinear_fdf_get()

```
subroutine fgsl_multilarge_nlinear_fdf_get (
    type(fgsl_multilarge_nlinear_fdf), intent(in) fdf,
    procedure(fgsl_nlinear_fdf_func), optional, pointer func,
    procedure(fgsl_nlinear_fdf_dfunc), optional, pointer dfunc,
    procedure(fgsl_nlinear_fdf_fvv), optional, pointer fvv,
    integer(fgsl_size_t), intent(out), optional n,
    integer(fgsl_size_t), intent(out), optional p,
    type(c_ptr), intent(out), optional params,
    integer(fgsl_size_t), intent(out), optional nevalf,
    integer(fgsl_size_t), intent(out), optional nevaldfu,
    integer(fgsl_size_t), intent(out), optional nevaldf2,
    integer(fgsl_size_t), intent(out), optional nevalfvv )
```

49.53.1.29 fgsl_multilarge_nlinear_fdf_init()

```
type(fgsl_multilarge_nlinear_fdf) function fgsl_multilarge_nlinear_fdf_init (
    integer(fgsl_size_t), intent(in) ndim,
    integer(fgsl_size_t), intent(in) p,
    type(c_ptr), intent(in) params,
    procedure(fgsl_nlinear_fdf_func), optional func,
    procedure(fgsl_nlinear_fdf_dfunc), optional dfunc,
    procedure(fgsl_nlinear_fdf_fvv), optional fvv )
```


49.53.1.30 fgsl_multilarge_nlinear_free()

```
subroutine fgsl_multilarge_nlinear_free (
    type(fgsl_multilarge_nlinear_workspace), intent(inout) w )
```

49.53.1.31 fgsl_multilarge_nlinear_init()

```
integer(fgsl_int) function fgsl_multilarge_nlinear_init (
    type(fgsl_vector), intent(in) x,
    type(fgsl_multilarge_nlinear_fdf), intent(in) fdf,
    type(fgsl_multilarge_nlinear_workspace), intent(inout) w )
```

49.53.1.32 fgsl_multilarge_nlinear_iterate()

```
integer(fgsl_int) function fgsl_multilarge_nlinear_iterate (
    type(fgsl_multilarge_nlinear_workspace), intent(inout) w )
```

49.53.1.33 fgsl_multilarge_nlinear_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_multilarge_nlinear_name (
    type(fgsl_multilarge_nlinear_workspace), intent(in) w )
```

49.53.1.34 fgsl_multilarge_nlinear_niter()

```
integer(fgsl_size_t) function fgsl_multilarge_nlinear_niter (
    type(fgsl_multilarge_nlinear_workspace), intent(in) w )
```

49.53.1.35 fgsl_multilarge_nlinear_parameters_set()

```
subroutine fgsl_multilarge_nlinear_parameters_set (
    type(fgsl_multilarge_nlinear_parameters) params,
    type(fgsl_multilarge_nlinear_trs), optional trs,
    type(fgsl_multilarge_nlinear_scale), optional scale,
    type(fgsl_multilarge_nlinear_solver), optional solver,
    integer(fgsl_int), optional fdtype,
    real(c_double), optional factor_up,
    real(c_double), optional factor_down,
    real(c_double), optional avmax,
    real(c_double), optional h_df,
    real(c_double), optional h_fvv,
    integer(fgsl_size_t), optional max_iter,
    real(c_double), optional tol )
```

49.53.1.36 fgsl_multilarge_nlinear_position()

```
type(fgsl_vector) function fgsl_multilarge_nlinear_position (
    type(fgsl_multilarge_nlinear_workspace), intent(in) w )
```

49.53.1.37 fgsl_multilarge_nlinear_rcond()

```
integer(fgsl_int) function fgsl_multilarge_nlinear_rcond (
    real(fgsl_double), intent(inout) rcond,
    type(fgsl_multilarge_nlinear_workspace), intent(in) w )
```

49.53.1.38 fgsl_multilarge_nlinear_residual()

```
type(fgsl_vector) function fgsl_multilarge_nlinear_residual (
    type(fgsl_multilarge_nlinear_workspace), intent(in) w )
```

49.53.1.39 fgsl_multilarge_nlinear_setup()

```
type(fgsl_multilarge_nlinear_type) function fgsl_multilarge_nlinear_setup (
    character(kind=fgsl_char, len=*) s )
```

49.53.1.40 fgsl_multilarge_nlinear_test()

```
integer(fgsl_int) function fgsl_multilarge_nlinear_test (
    real(fgsl_double), intent(in) xtol,
    real(fgsl_double), intent(in) gtol,
    real(fgsl_double), intent(in) ftol,
    integer(fgsl_int), intent(inout) info,
    type(fgsl_multilarge_nlinear_workspace), intent(in) w )
```

49.53.1.41 fgsl_multilarge_nlinear_trs_name()

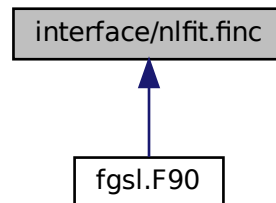
```
character(kind=fgsl_char, len=fgsl_strmax) function fgsl_multilarge_nlinear_trs_name (
    type(fgsl_multilarge_nlinear_workspace), intent(in) w )
```

49.53.1.42 fgsl_multilarge_nlinear_winit()

```
integer(fgsl_int) function fgsl_multilarge_nlinear_winit (
    type(fgsl_vector), intent(in) x,
    type(fgsl_vector), intent(in) wts,
    type(fgsl_multilarge_nlinear_fdf), intent(in) fdf,
    type(fgsl_multilarge_nlinear_workspace), intent(inout) w )
```

49.54 interface/nlfit.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_multifit_nlinear_setup](#) (s)
- type(c_ptr) function [gsl_multilarge_nlinear_setup](#) (s)
- type(c_ptr) function [gsl_multifit_nlinear_alloc](#) (t, params, n, p)
- type(c_ptr) function [gsl_multilarge_nlinear_alloc](#) (t, params, n, p)
- type(gsl_multifit_nlinear_parameters) function [gsl_multifit_nlinear_default_parameters](#) ()
- type(gsl_multilarge_nlinear_parameters) function [gsl_multilarge_nlinear_default_parameters](#) ()
- integer(c_int) function [gsl_multifit_nlinear_init](#) (x, fdf, w)
- integer(c_int) function [gsl_multilarge_nlinear_init](#) (x, fdf, w)
- integer(c_int) function [gsl_multifit_nlinear_winit](#) (x, wts, fdf, w)
- integer(c_int) function [gsl_multilarge_nlinear_winit](#) (x, wts, fdf, w)
- subroutine [gsl_multifit_nlinear_free](#) (w)
- subroutine [gsl_multilarge_nlinear_free](#) (w)
- type(c_ptr) function [gsl_multifit_nlinear_name](#) (w)
- type(c_ptr) function [gsl_multilarge_nlinear_name](#) (w)
- type(c_ptr) function [gsl_multifit_nlinear_trs_name](#) (w)
- type(c_ptr) function [gsl_multilarge_nlinear_trs_name](#) (w)
- integer(c_int) function [gsl_multifit_nlinear_iterate](#) (w)
- integer(c_int) function [gsl_multilarge_nlinear_iterate](#) (w)
- type(c_ptr) function [gsl_multifit_nlinear_position](#) (w)
- type(c_ptr) function [gsl_multilarge_nlinear_position](#) (w)
- type(c_ptr) function [gsl_multifit_nlinear_residual](#) (w)
- type(c_ptr) function [gsl_multilarge_nlinear_residual](#) (w)
- type(c_ptr) function [gsl_multifit_nlinear_jac](#) (w)

- integer(c_int) function [gsl_multifit_nlinear_niter](#) (w)
- integer(c_int) function [gsl_multilarge_nlinear_niter](#) (w)
- integer(c_int) function [gsl_multifit_nlinear_rcond](#) (rcond, w)
- integer(c_int) function [gsl_multilarge_nlinear_rcond](#) (rcond, w)
- integer(c_int) function [gsl_multifit_nlinear_test](#) (xtol, gtol, ftol, info, w)
- integer(c_int) function [gsl_multilarge_nlinear_test](#) (xtol, gtol, ftol, info, w)
- integer(c_int) function [gsl_multifit_nlinear_driver](#) (maxiter, xtol, gtol, ftol, callback, callback_params, info, w)
- integer(c_int) function [gsl_multilarge_nlinear_driver](#) (maxiter, xtol, gtol, ftol, callback, callback_params, info, w)
- integer(c_int) function [gsl_multifit_nlinear_covar](#) (j, epsrel, covar)
- integer(c_int) function [gsl_multilarge_nlinear_covar](#) (covar, w)
- type(c_ptr) function [fgsl_multifit_nlinear_fdf_cinit](#) (ndim, p, params, fp, dfp, fvpv)
- subroutine [gsl_multifit_nlinear_fdf_get](#) (fdf, fp, dfp, fvpv, n, p, params, nevalf, nevaldf, nevalfvv)
- subroutine [fgsl_multifit_nlinear_fdf_cfree](#) (fdf)
- type(c_ptr) function [gsl_multifit_nlinear_get_trs](#) (which)
- type(c_ptr) function [gsl_multifit_nlinear_get_scale](#) (which)
- type(c_ptr) function [gsl_multifit_nlinear_get_solver](#) (which)
- type(c_ptr) function [fgsl_multilarge_nlinear_fdf_cinit](#) (ndim, p, params, fp, dfp, fvpv)
- subroutine [fgsl_multilarge_nlinear_fdf_cfree](#) (fdf)
- subroutine [gsl_multilarge_nlinear_fdf_get](#) (fdf, fp, dfp, fvpv, n, p, params, nevalf, nevaldfu, nevaldf2, nevalfvv)
- type(c_ptr) function [gsl_multilarge_nlinear_get_trs](#) (which)
- type(c_ptr) function [gsl_multilarge_nlinear_get_scale](#) (which)
- type(c_ptr) function [gsl_multilarge_nlinear_get_solver](#) (which)

49.54.1 Function/Subroutine Documentation

49.54.1.1 fgsl_multifit_nlinear_fdf_cfree()

```
subroutine fgsl_multifit_nlinear_fdf_cfree (
    type(c_ptr), value fdf )
```

49.54.1.2 fgsl_multifit_nlinear_fdf_cinit()

```
type(c_ptr) function fgsl_multifit_nlinear_fdf_cinit (
    integer(c_size_t), value ndim,
    integer(c_size_t), value p,
    type(c_ptr), value params,
    type(c_funptr), value fp,
    type(c_funptr), value dfp,
    type(c_funptr), value fvpv )
```

49.54.1.3 fgsl_multilarge_nlinear_fdf_cfree()

```
subroutine fgsl_multilarge_nlinear_fdf_cfree (
    type(c_ptr), value fdf )
```

49.54.1.4 fgsl_multilarge_nlinear_fdf_cinit()

```
type(c_ptr) function fgsl_multilarge_nlinear_fdf_cinit (
    integer(c_size_t), value ndim,
    integer(c_size_t), value p,
    type(c_ptr), value params,
    type(c_funptr), value fp,
    type(c_funptr), value dfp,
    type(c_funptr), value fvp )
```

49.54.1.5 gsl_multifit_nlinear_alloc()

```
type(c_ptr) function gsl_multifit_nlinear_alloc (
    type(c_ptr), value t,
    type(gsl_multifit_nlinear_parameters) params,
    integer(c_size_t), value n,
    integer(c_size_t), value p )
```

49.54.1.6 gsl_multifit_nlinear_covar()

```
integer(c_int) function gsl_multifit_nlinear_covar (
    type(c_ptr), value j,
    real(c_double), value epsrel,
    type(c_ptr), value covar )
```

49.54.1.7 gsl_multifit_nlinear_default_parameters()

```
type(gsl_multifit_nlinear_parameters) function gsl_multifit_nlinear_default_parameters
```

49.54.1.8 `gsl_multifit_nlinear_driver()`

```
integer(c_int) function gsl_multifit_nlinear_driver (
    integer(c_size_t), value maxiter,
    real(c_double), value xtol,
    real(c_double), value gtol,
    real(c_double), value ftol,
    type(c_funptr), value callback,
    type(c_ptr), value callback_params,
    integer(c_int), intent(inout) info,
    type(c_ptr), value w )
```

49.54.1.9 `gsl_multifit_nlinear_fdf_get()`

```
subroutine gsl_multifit_nlinear_fdf_get (
    type(c_ptr), value fdf,
    type(c_funptr) fp,
    type(c_funptr) dfp,
    type(c_funptr) fvvp,
    integer(c_size_t) n,
    integer(c_size_t) p,
    type(c_ptr) params,
    integer(c_size_t) nevalf,
    integer(c_size_t) nevaldf,
    integer(c_size_t) nevalfvv )
```

49.54.1.10 `gsl_multifit_nlinear_free()`

```
subroutine gsl_multifit_nlinear_free (
    type(c_ptr), value w )
```

49.54.1.11 `gsl_multifit_nlinear_get_scale()`

```
type(c_ptr) function gsl_multifit_nlinear_get_scale (
    integer(c_int), value which )
```

49.54.1.12 `gsl_multifit_nlinear_get_solver()`

```
type(c_ptr) function gsl_multifit_nlinear_get_solver (
    integer(c_int), value which )
```

49.54.1.13 gsl_multifit_nlinear_get_trs()

```
type(c_ptr) function gsl_multifit_nlinear_get_trs (
    integer(c_int), value which )
```

49.54.1.14 gsl_multifit_nlinear_init()

```
integer(c_int) function gsl_multifit_nlinear_init (
    type(c_ptr), value x,
    type(c_ptr), value fdf,
    type(c_ptr), value w )
```

49.54.1.15 gsl_multifit_nlinear_iterate()

```
integer(c_int) function gsl_multifit_nlinear_iterate (
    type(c_ptr), value w )
```

49.54.1.16 gsl_multifit_nlinear_jac()

```
type(c_ptr) function gsl_multifit_nlinear_jac (
    type(c_ptr), value w )
```

49.54.1.17 gsl_multifit_nlinear_name()

```
type(c_ptr) function gsl_multifit_nlinear_name (
    type(c_ptr), value w )
```

49.54.1.18 gsl_multifit_nlinear_niter()

```
integer (c_int) function gsl_multifit_nlinear_niter (
    type(c_ptr), value w )
```

49.54.1.19 gsl_multifit_nlinear_position()

```
type(c_ptr) function gsl_multifit_nlinear_position (
    type(c_ptr), value w )
```

49.54.1.20 gsl_multifit_nlinear_rcond()

```
integer (c_int) function gsl_multifit_nlinear_rcond (  
    real(c_double), intent(inout) rcond,  
    type(c_ptr), value w )
```

49.54.1.21 gsl_multifit_nlinear_residual()

```
type(c_ptr) function gsl_multifit_nlinear_residual (  
    type(c_ptr), value w )
```

49.54.1.22 gsl_multifit_nlinear_setup()

```
type(c_ptr) function gsl_multifit_nlinear_setup (  
    character(c_char) s )
```

49.54.1.23 gsl_multifit_nlinear_test()

```
integer(c_int) function gsl_multifit_nlinear_test (  
    real(c_double), value xtol,  
    real(c_double), value gtol,  
    real(c_double), value ftol,  
    integer(c_int), intent(inout) info,  
    type(c_ptr), value w )
```

49.54.1.24 gsl_multifit_nlinear_trs_name()

```
type(c_ptr) function gsl_multifit_nlinear_trs_name (  
    type(c_ptr), value w )
```

49.54.1.25 gsl_multifit_nlinear_winit()

```
integer(c_int) function gsl_multifit_nlinear_winit (  
    type(c_ptr), value x,  
    type(c_ptr), value wts,  
    type(c_ptr), value fdf,  
    type(c_ptr), value w )
```


49.54.1.26 gsl_multilarge_nlinear_alloc()

```
type(c_ptr) function gsl_multilarge_nlinear_alloc (
    type(c_ptr), value t,
    type(gsl_multilarge_nlinear_parameters) params,
    integer(c_size_t), value n,
    integer(c_size_t), value p )
```

49.54.1.27 gsl_multilarge_nlinear_covar()

```
integer(c_int) function gsl_multilarge_nlinear_covar (
    type(c_ptr), value covar,
    type(c_ptr), value w )
```

49.54.1.28 gsl_multilarge_nlinear_default_parameters()

```
type(gsl_multilarge_nlinear_parameters) function gsl_multilarge_nlinear_default_parameters
```

49.54.1.29 gsl_multilarge_nlinear_driver()

```
integer(c_int) function gsl_multilarge_nlinear_driver (
    integer(c_size_t), value maxiter,
    real(c_double), value xtol,
    real(c_double), value gtol,
    real(c_double), value ftol,
    type(c_funptr), value callback,
    type(c_ptr), value callback_params,
    integer(c_int), intent(inout) info,
    type(c_ptr), value w )
```

49.54.1.30 gsl_multilarge_nlinear_fdf_get()

```
subroutine gsl_multilarge_nlinear_fdf_get (
    type(c_ptr), value fdf,
    type(c_funptr) fp,
    type(c_funptr) dfp,
    type(c_funptr) fvv,
    integer(c_size_t) n,
    integer(c_size_t) p,
    type(c_ptr) params,
    integer(c_size_t) nevalf,
    integer(c_size_t) nevaldfu,
    integer(c_size_t) nevaldf2,
    integer(c_size_t) nevalfvv )
```

49.54.1.31 gsl_multilarge_nlinear_free()

```
subroutine gsl_multilarge_nlinear_free (
    type(c_ptr), value w )
```

49.54.1.32 gsl_multilarge_nlinear_get_scale()

```
type(c_ptr) function gsl_multilarge_nlinear_get_scale (
    integer(c_int), value which )
```

49.54.1.33 gsl_multilarge_nlinear_get_solver()

```
type(c_ptr) function gsl_multilarge_nlinear_get_solver (
    integer(c_int), value which )
```

49.54.1.34 gsl_multilarge_nlinear_get_trs()

```
type(c_ptr) function gsl_multilarge_nlinear_get_trs (
    integer(c_int), value which )
```

49.54.1.35 gsl_multilarge_nlinear_init()

```
integer(c_int) function gsl_multilarge_nlinear_init (
    type(c_ptr), value x,
    type(c_ptr), value fdf,
    type(c_ptr), value w )
```

49.54.1.36 gsl_multilarge_nlinear_iterate()

```
integer(c_int) function gsl_multilarge_nlinear_iterate (
    type(c_ptr), value w )
```

49.54.1.37 gsl_multilarge_nlinear_name()

```
type(c_ptr) function gsl_multilarge_nlinear_name (
    type(c_ptr), value w )
```

49.54.1.38 gsl_multilarge_nlinear_niter()

```
integer (c_int) function gsl_multilarge_nlinear_niter (  
    type(c_ptr), value w )
```

49.54.1.39 gsl_multilarge_nlinear_position()

```
type(c_ptr) function gsl_multilarge_nlinear_position (  
    type(c_ptr), value w )
```

49.54.1.40 gsl_multilarge_nlinear_rcond()

```
integer (c_int) function gsl_multilarge_nlinear_rcond (  
    real(c_double), intent(inout) rcond,  
    type(c_ptr), value w )
```

49.54.1.41 gsl_multilarge_nlinear_residual()

```
type(c_ptr) function gsl_multilarge_nlinear_residual (  
    type(c_ptr), value w )
```

49.54.1.42 gsl_multilarge_nlinear_setup()

```
type(c_ptr) function gsl_multilarge_nlinear_setup (  
    character(c_char) s )
```

49.54.1.43 gsl_multilarge_nlinear_test()

```
integer(c_int) function gsl_multilarge_nlinear_test (  
    real(c_double), value xtol,  
    real(c_double), value gtol,  
    real(c_double), value ftol,  
    integer(c_int), intent(inout) info,  
    type(c_ptr), value w )
```

49.54.1.44 `gsl_multilarge_nlinear_trs_name()`

```
type(c_ptr) function gsl_multilarge_nlinear_trs_name (
    type(c_ptr), value w )
```

49.54.1.45 `gsl_multilarge_nlinear_winit()`

```
integer(c_int) function gsl_multilarge_nlinear_winit (
    type(c_ptr), value x,
    type(c_ptr), value wts,
    type(c_ptr), value fdf,
    type(c_ptr), value w )
```

49.55 `api/ntuple.finc` File Reference

Functions/Subroutines

- `type(fgsl_ntuple)` function [fgsl_ntuple_create](#) (fname, data, size)
- `type(fgsl_ntuple)` function [fgsl_ntuple_open](#) (fname, data, size)
- `integer(fgsl_int)` function [fgsl_ntuple_write](#) (ntuple)
- `integer(fgsl_int)` function [fgsl_ntuple_bookdata](#) (ntuple)
- `integer(fgsl_int)` function [fgsl_ntuple_read](#) (ntuple)
- `integer(fgsl_int)` function [fgsl_ntuple_close](#) (ntuple)
- `type(fgsl_ntuple_select_fn)` function [fgsl_ntuple_select_fn_init](#) (func, params)
- `type(fgsl_ntuple_value_fn)` function [fgsl_ntuple_value_fn_init](#) (func, params)
- subroutine [fgsl_ntuple_select_fn_free](#) (sfunc)
- subroutine [fgsl_ntuple_value_fn_free](#) (sfunc)
- `integer(fgsl_int)` function [fgsl_ntuple_project](#) (h, ntuple, value_func, select_func)
- `type(c_ptr)` function [fgsl_ntuple_data](#) (ntuple)
- `integer(fgsl_size_t)` function [fgsl_ntuple_size](#) (ntuple)
- logical function [fgsl_ntuple_status](#) (ntuple)
- logical function [fgsl_ntuple_value_fn_status](#) (ntuple_value_fn)
- logical function [fgsl_ntuple_select_fn_status](#) (ntuple_select_fn)

49.55.1 Function/Subroutine Documentation

49.55.1.1 `fgsl_ntuple_bookdata()`

```
integer(fgsl_int) function fgsl_ntuple_bookdata (
    type(fgsl_ntuple), intent(in) ntuple )
```

49.55.1.2 fgsl_ntuple_close()

```
integer(fgsl_int) function fgsl_ntuple_close (  
    type(fgsl_ntuple), intent(inout) ntuple )
```

49.55.1.3 fgsl_ntuple_create()

```
type(fgsl_ntuple) function fgsl_ntuple_create (  
    character(kind=fgsl_char, len=*), intent(in) fname,  
    type(c_ptr), intent(in) data,  
    integer(fgsl_size_t), intent(in) size )
```

49.55.1.4 fgsl_ntuple_data()

```
type(c_ptr) function fgsl_ntuple_data (  
    type(fgsl_ntuple), intent(in) ntuple )
```

49.55.1.5 fgsl_ntuple_open()

```
type(fgsl_ntuple) function fgsl_ntuple_open (  
    character(kind=fgsl_char, len=*), intent(in) fname,  
    type(c_ptr), intent(in) data,  
    integer(fgsl_size_t), intent(in) size )
```

49.55.1.6 fgsl_ntuple_project()

```
integer(fgsl_int) function fgsl_ntuple_project (  
    type(fgsl_histogram), intent(inout) h,  
    type(fgsl_ntuple), intent(in) ntuple,  
    type(fgsl_ntuple_value_fn), intent(in) value_func,  
    type(fgsl_ntuple_select_fn), intent(in) select_func )
```

49.55.1.7 fgsl_ntuple_read()

```
integer(fgsl_int) function fgsl_ntuple_read (  
    type(fgsl_ntuple), intent(inout) ntuple )
```

49.55.1.8 fgsl_ntuple_select_fn_free()

```
subroutine fgsl_ntuple_select_fn_free (  
    type(fgsl_ntuple_select_fn), intent(inout) sfunc )
```

49.55.1.9 fgsl_ntuple_select_fn_init()

```
type(fgsl_ntuple_select_fn) function fgsl_ntuple_select_fn_init (  
    func,  
    type(c_ptr), intent(in) params )
```

49.55.1.10 fgsl_ntuple_select_fn_status()

```
logical function fgsl_ntuple_select_fn_status (  
    type(fgsl_ntuple_select_fn), intent(in) ntuple_select_fn )
```

49.55.1.11 fgsl_ntuple_size()

```
integer(fgsl_size_t) function fgsl_ntuple_size (  
    type(fgsl_ntuple), intent(in) ntuple )
```

49.55.1.12 fgsl_ntuple_status()

```
logical function fgsl_ntuple_status (  
    type(fgsl_ntuple), intent(in) ntuple )
```

49.55.1.13 fgsl_ntuple_value_fn_free()

```
subroutine fgsl_ntuple_value_fn_free (  
    type(fgsl_ntuple_value_fn), intent(inout) sfunc )
```

49.55.1.14 fgsl_ntuple_value_fn_init()

```
type(fgsl_ntuple_value_fn) function fgsl_ntuple_value_fn_init (  
    func,  
    type(c_ptr), intent(in) params )
```

49.55.1.15 fgsl_ntuple_value_fn_status()

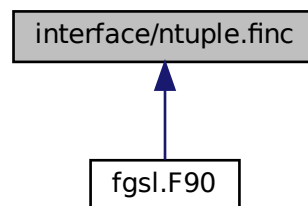
```
logical function fgsl_ntuple_value_fn_status (
    type(fgsl_ntuple_value_fn), intent(in) ntuple_value_fn )
```

49.55.1.16 fgsl_ntuple_write()

```
integer(fgsl_int) function fgsl_ntuple_write (
    type(fgsl_ntuple), intent(in) ntuple )
```

49.56 interface/ntuple.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- type(c_ptr) function [gsl_ntuple_create](#) (fname, data, size)
- type(c_ptr) function [gsl_ntuple_open](#) (fname, data, size)
- integer(c_int) function [gsl_ntuple_write](#) (ntuple)
- integer(c_int) function [gsl_ntuple_read](#) (ntuple)
- integer(c_int) function [gsl_ntuple_close](#) (ntuple)
- type(c_ptr) function [fgsl_ntuple_select_fn_cinit](#) (func, params)
- type(c_ptr) function [fgsl_ntuple_value_fn_cinit](#) (func, params)
- subroutine [fgsl_ntuple_select_fn_cfree](#) (sfunc)
- subroutine [fgsl_ntuple_value_fn_cfree](#) (sfunc)
- integer(c_int) function [gsl_ntuple_project](#) (h, ntuple, value_func, select_func)
- type(c_ptr) function [fgsl_aux_ntuple_data](#) (ntuple)
- integer(c_size_t) function [fgsl_aux_ntuple_size](#) (ntuple)

49.56.1 Function/Subroutine Documentation

49.56.1.1 fgsl_aux_ntuple_data()

```
type(c_ptr) function fgsl_aux_ntuple_data (  
    type(c_ptr), value ntuple )
```

49.56.1.2 fgsl_aux_ntuple_size()

```
integer(c_size_t) function fgsl_aux_ntuple_size (  
    type(c_ptr), value ntuple )
```

49.56.1.3 fgsl_ntuple_select_fn_cfree()

```
subroutine fgsl_ntuple_select_fn_cfree (  
    type(c_ptr), value sfunc )
```

49.56.1.4 fgsl_ntuple_select_fn_cinit()

```
type(c_ptr) function fgsl_ntuple_select_fn_cinit (  
    type(c_funptr), value func,  
    type(c_ptr), value params )
```

49.56.1.5 fgsl_ntuple_value_fn_cfree()

```
subroutine fgsl_ntuple_value_fn_cfree (  
    type(c_ptr), value sfunc )
```

49.56.1.6 fgsl_ntuple_value_fn_cinit()

```
type(c_ptr) function fgsl_ntuple_value_fn_cinit (  
    type(c_funptr), value func,  
    type(c_ptr), value params )
```

49.56.1.7 fgsl_ntuple_close()

```
integer(c_int) function fgsl_ntuple_close (  
    type(c_ptr), value ntuple )
```


49.56.1.8 `gsl_ntuple_create()`

```
type(c_ptr) function gsl_ntuple_create (
    type(c_ptr), value fname,
    type(c_ptr), value data,
    integer(c_size_t), value size )
```

49.56.1.9 `gsl_ntuple_open()`

```
type(c_ptr) function gsl_ntuple_open (
    type(c_ptr), value fname,
    type(c_ptr), value data,
    integer(c_size_t), value size )
```

49.56.1.10 `gsl_ntuple_project()`

```
integer(c_int) function gsl_ntuple_project (
    type(c_ptr), value h,
    type(c_ptr), value ntuple,
    type(c_ptr), value value_func,
    type(c_ptr), value select_func )
```

49.56.1.11 `gsl_ntuple_read()`

```
integer(c_int) function gsl_ntuple_read (
    type(c_ptr), value ntuple )
```

49.56.1.12 `gsl_ntuple_write()`

```
integer(c_int) function gsl_ntuple_write (
    type(c_ptr), value ntuple )
```

49.57 api/ode.finc File Reference

Functions/Subroutines

- type(fgsl_odeiv2_system) function [fgsl_odeiv2_system_init](#) (func, dimension, params, jacobian)
Constructor for an ODE system object.
- subroutine [fgsl_odeiv2_system_free](#) (system)
- type(fgsl_odeiv2_step) function [fgsl_odeiv2_step_alloc](#) (t, dim)
- integer(fgsl_int) function [fgsl_odeiv2_step_reset](#) (s)
- subroutine [fgsl_odeiv2_step_free](#) (s)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_odeiv2_step_name](#) (s)
- integer(fgsl_int) function [fgsl_odeiv2_step_order](#) (s)
- integer(c_int) function [fgsl_odeiv2_step_set_driver](#) (s, d)
- integer(fgsl_int) function [fgsl_odeiv2_step_apply](#) (s, t, h, y, yerr, dydt_in, dydt_out, dydt)
- type(fgsl_odeiv2_control) function [fgsl_odeiv2_control_standard_new](#) (eps_abs, eps_rel, a_y, a_dydt)
- type(fgsl_odeiv2_control) function [fgsl_odeiv2_control_y_new](#) (eps_abs, eps_rel)
- type(fgsl_odeiv2_control) function [fgsl_odeiv2_control_yp_new](#) (eps_abs, eps_rel)
- type(fgsl_odeiv2_control) function [fgsl_odeiv2_control_scaled_new](#) (eps_abs, eps_rel, a_y, a_dydt, scale←_abs)
- type(fgsl_odeiv2_control) function [fgsl_odeiv2_control_alloc](#) (t)
Note: use of fgsl_odeiv2_control_alloc requires an initializer for the t object written in C.
- integer(fgsl_int) function [fgsl_odeiv2_control_init](#) (c, eps_abs, eps_rel, a_y, a_dydt)
- subroutine [fgsl_odeiv2_control_free](#) (c)
- logical function [fgsl_odeiv2_control_status](#) (s)
- integer(fgsl_int) function [fgsl_odeiv2_control_hadjust](#) (c, s, y, yerr, dydt, h)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_odeiv2_control_name](#) (c)
- integer(fgsl_int) function [fgsl_odeiv2_control_errlevel](#) (c, y, dydt, h, ind, errlev)
- integer(fgsl_int) function [fgsl_odeiv2_control_set_driver](#) (c, d)
- type(fgsl_odeiv2_evolve) function [fgsl_odeiv2_evolve_alloc](#) (dim)
- integer(fgsl_int) function [fgsl_odeiv2_evolve_apply](#) (e, con, step, dydt, t, t1, h, y)
- integer(fgsl_int) function [fgsl_odeiv2_evolve_apply_fixed_step](#) (e, con, step, dydt, t, h0, y)
- integer(c_int) function [fgsl_odeiv2_evolve_reset](#) (s)
- subroutine [fgsl_odeiv2_evolve_free](#) (s)
- logical function [fgsl_odeiv2_evolve_status](#) (s)
- logical function [fgsl_odeiv2_step_status](#) (s)
- logical function [fgsl_odeiv2_system_status](#) (s)
- integer(fgsl_int) function [fgsl_odeiv2_evolve_set_driver](#) (c, d)
- type(fgsl_odeiv2_driver) function [fgsl_odeiv2_driver_alloc_y_new](#) (sys, t, hstart, epsabs, epsrel)
- type(fgsl_odeiv2_driver) function [fgsl_odeiv2_driver_alloc_yp_new](#) (sys, t, hstart, epsabs, epsrel)
- type(fgsl_odeiv2_driver) function [fgsl_odeiv2_driver_alloc_standard_new](#) (sys, t, hstart, epsabs, epsrel, a_y, a_dydt)
- type(fgsl_odeiv2_driver) function [fgsl_odeiv2_driver_alloc_scaled_new](#) (sys, t, hstart, epsabs, epsrel, a_y, a_dydt, scale_abs)
- integer(fgsl_int) function [fgsl_odeiv2_driver_set_hmin](#) (d, hmin)
- integer(fgsl_int) function [fgsl_odeiv2_driver_set_hmax](#) (d, hmax)
- integer(fgsl_int) function [fgsl_odeiv2_driver_set_nmax](#) (d, nmax)
- integer(fgsl_int) function [fgsl_odeiv2_driver_apply](#) (d, t, t1, y)
- integer(fgsl_int) function [fgsl_odeiv2_driver_apply_fixed_step](#) (d, t, h, n, y)
- integer(fgsl_int) function [fgsl_odeiv2_driver_reset](#) (d)
- subroutine [fgsl_odeiv2_driver_free](#) (d)
- logical function [fgsl_odeiv2_driver_status](#) (s)
- integer(fgsl_int) function [fgsl_odeiv2_driver_reset_hstart](#) (d, hstart)
- type(fgsl_odeiv_system) function [fgsl_odeiv_system_init](#) (func, dimension, params, jacobian)
Constructor for an ODE system object.

- subroutine [fgsl_odeiv_system_free](#) (system)
- type(fgsl_odeiv_step) function [fgsl_odeiv_step_alloc](#) (t, dim)
- integer(fgsl_int) function [fgsl_odeiv_step_reset](#) (s)
- subroutine [fgsl_odeiv_step_free](#) (s)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_odeiv_step_name](#) (s)
- integer(fgsl_int) function [fgsl_odeiv_step_order](#) (s)
- integer(fgsl_int) function [fgsl_odeiv_step_apply](#) (s, t, h, y, yerr, dydt_in, dydt_out, dydt)
- type(fgsl_odeiv_control) function [fgsl_odeiv_control_standard_new](#) (eps_abs, eps_rel, a_y, a_dydt)
- type(fgsl_odeiv_control) function [fgsl_odeiv_control_y_new](#) (eps_abs, eps_rel)
- type(fgsl_odeiv_control) function [fgsl_odeiv_control_yp_new](#) (eps_abs, eps_rel)
- type(fgsl_odeiv_control) function [fgsl_odeiv_control_scaled_new](#) (eps_abs, eps_rel, a_y, a_dydt, scale_abs)
- type(fgsl_odeiv_control) function [fgsl_odeiv_control_alloc](#) (t)

Note: Use of [fgsl_odeiv_control_alloc](#) requires an initializer for the t object written in C.

- integer(fgsl_int) function [fgsl_odeiv_control_init](#) (c, eps_abs, eps_rel, a_y, a_dydt)
- subroutine [fgsl_odeiv_control_free](#) (c)
- integer(fgsl_int) function [fgsl_odeiv_control_hadjust](#) (c, s, y0, yerr, dydt, h)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_odeiv_control_name](#) (c)
- type(fgsl_odeiv_evolve) function [fgsl_odeiv_evolve_alloc](#) (dim)
- integer(fgsl_int) function [fgsl_odeiv_evolve_apply](#) (e, con, step, dydt, t, t1, h, y)
- integer(c_int) function [fgsl_odeiv_evolve_reset](#) (s)
- subroutine [fgsl_odeiv_evolve_free](#) (s)
- logical function [fgsl_odeiv_evolve_status](#) (s)
- logical function [fgsl_odeiv_control_status](#) (s)
- logical function [fgsl_odeiv_step_status](#) (s)
- logical function [fgsl_odeiv_system_status](#) (s)

49.57.1 Function/Subroutine Documentation

49.57.1.1 [fgsl_odeiv2_control_alloc\(\)](#)

```
type(fgsl_odeiv2_control) function fgsl_odeiv2_control_alloc (
    type(fgsl_odeiv2_control_type), intent(in) t )
```

Note: use of [fgsl_odeiv2_control_alloc](#) requires an initializer for the t object written in C.

49.57.1.2 [fgsl_odeiv2_control_errlevel\(\)](#)

```
integer(fgsl_int) function fgsl_odeiv2_control_errlevel (
    type(fgsl_odeiv2_control), value c,
    real(fgsl_double), intent(in) y,
    real(fgsl_double), intent(in) dydt,
    real(fgsl_double), intent(in) h,
    integer(fgsl_size_t), intent(in) ind,
    real(fgsl_double), intent(inout) errlev )
```

49.57.1.3 fgsl_odeiv2_control_free()

```
subroutine fgsl_odeiv2_control_free (
    type(fgsl_odeiv2_control), intent(inout) c )
```

49.57.1.4 fgsl_odeiv2_control_hadjust()

```
integer(fgsl_int) function fgsl_odeiv2_control_hadjust (
    type(fgsl_odeiv2_control), intent(in) c,
    type(fgsl_odeiv2_step), intent(in) s,
    real(fgsl_double), dimension(:), intent(in), target, contiguous y,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yerr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous dydt,
    real(fgsl_double), intent(out) h )
```

49.57.1.5 fgsl_odeiv2_control_init()

```
integer(fgsl_int) function fgsl_odeiv2_control_init (
    type(fgsl_odeiv2_control), intent(in) c,
    real(fgsl_double), intent(in) eps_abs,
    real(fgsl_double), intent(in) eps_rel,
    real(fgsl_double), intent(in) a_y,
    real(fgsl_double), intent(in) a_dydt )
```

49.57.1.6 fgsl_odeiv2_control_name()

```
character(kind=fgsl_char, len=fgsl_strmax) function fgsl_odeiv2_control_name (
    type(fgsl_odeiv2_control), intent(in) c )
```

49.57.1.7 fgsl_odeiv2_control_scaled_new()

```
type(fgsl_odeiv2_control) function fgsl_odeiv2_control_scaled_new (
    real(fgsl_double), intent(in) eps_abs,
    real(fgsl_double), intent(in) eps_rel,
    real(fgsl_double), intent(in) a_y,
    real(fgsl_double), intent(in) a_dydt,
    real(fgsl_double), dimension(:), intent(in), target, contiguous scale_abs )
```

49.57.1.8 fgsl_odeiv2_control_set_driver()

```
integer(fgsl_int) function fgsl_odeiv2_control_set_driver (  
    type(fgsl_odeiv2_control), intent(inout) c,  
    type(fgsl_odeiv2_driver), intent(in) d )
```

49.57.1.9 fgsl_odeiv2_control_standard_new()

```
type(fgsl_odeiv2_control) function fgsl_odeiv2_control_standard_new (  
    real(fgsl_double), intent(in) eps_abs,  
    real(fgsl_double), intent(in) eps_rel,  
    real(fgsl_double), intent(in) a_y,  
    real(fgsl_double), intent(in) a_dydt )
```

49.57.1.10 fgsl_odeiv2_control_status()

```
logical function fgsl_odeiv2_control_status (  
    type(fgsl_odeiv2_control), intent(in) s )
```

49.57.1.11 fgsl_odeiv2_control_y_new()

```
type(fgsl_odeiv2_control) function fgsl_odeiv2_control_y_new (  
    real(fgsl_double), intent(in) eps_abs,  
    real(fgsl_double), intent(in) eps_rel )
```

49.57.1.12 fgsl_odeiv2_control_yp_new()

```
type(fgsl_odeiv2_control) function fgsl_odeiv2_control_yp_new (  
    real(fgsl_double), intent(in) eps_abs,  
    real(fgsl_double), intent(in) eps_rel )
```

49.57.1.13 fgsl_odeiv2_driver_alloc_scaled_new()

```
type(fgsl_odeiv2_driver) function fgsl_odeiv2_driver_alloc_scaled_new (  
    type(fgsl_odeiv2_system), intent(in) sys,  
    type(fgsl_odeiv2_step_type), intent(in) t,  
    real(c_double), intent(in) hstart,  
    real(c_double), intent(in) epsabs,  
    real(c_double), intent(in) epsrel,  
    real(c_double), intent(in) a_y,  
    real(c_double), intent(in) a_dydt,  
    real(c_double), dimension(:) scale_abs )
```

49.57.1.14 fgsl_odeiv2_driver_alloc_standard_new()

```

type(fgsl_odeiv2_driver) function fgsl_odeiv2_driver_alloc_standard_new (
    type(fgsl_odeiv2_system), intent(in) sys,
    type(fgsl_odeiv2_step_type), intent(in) t,
    real(c_double), intent(in) hstart,
    real(c_double), intent(in) epsabs,
    real(c_double), intent(in) epsrel,
    real(c_double), intent(in) a_y,
    real(c_double), intent(in) a_dydt )

```

49.57.1.15 fgsl_odeiv2_driver_alloc_y_new()

```

type(fgsl_odeiv2_driver) function fgsl_odeiv2_driver_alloc_y_new (
    type(fgsl_odeiv2_system), intent(in) sys,
    type(fgsl_odeiv2_step_type), intent(in) t,
    real(c_double), intent(in) hstart,
    real(c_double), intent(in) epsabs,
    real(c_double), intent(in) epsrel )

```

49.57.1.16 fgsl_odeiv2_driver_alloc_yp_new()

```

type(fgsl_odeiv2_driver) function fgsl_odeiv2_driver_alloc_yp_new (
    type(fgsl_odeiv2_system), intent(in) sys,
    type(fgsl_odeiv2_step_type), intent(in) t,
    real(c_double), intent(in) hstart,
    real(c_double), intent(in) epsabs,
    real(c_double), intent(in) epsrel )

```

49.57.1.17 fgsl_odeiv2_driver_apply()

```

integer(fgsl_int) function fgsl_odeiv2_driver_apply (
    type(fgsl_odeiv2_driver), intent(inout) d,
    real(fgsl_double), intent(inout) t,
    real(fgsl_double), intent(in) t1,
    real(fgsl_double), dimension(:), intent(inout) y )

```

49.57.1.18 fgsl_odeiv2_driver_apply_fixed_step()

```

integer(fgsl_int) function fgsl_odeiv2_driver_apply_fixed_step (
    type(fgsl_odeiv2_driver), intent(inout) d,
    real(fgsl_double), intent(inout) t,
    real(fgsl_double), intent(in) h,
    integer(fgsl_long), intent(in) n,
    real(fgsl_double), dimension(:), intent(inout) y )

```

49.57.1.19 fgsl_odeiv2_driver_free()

```
subroutine fgsl_odeiv2_driver_free (  
    type(fgsl_odeiv2_driver), intent(inout) d )
```

49.57.1.20 fgsl_odeiv2_driver_reset()

```
integer(fgsl_int) function fgsl_odeiv2_driver_reset (  
    type(fgsl_odeiv2_driver), intent(inout) d )
```

49.57.1.21 fgsl_odeiv2_driver_reset_hstart()

```
integer(fgsl_int) function fgsl_odeiv2_driver_reset_hstart (  
    type(fgsl_odeiv2_driver), intent(inout) d,  
    real(fgsl_double), intent(in) hstart )
```

49.57.1.22 fgsl_odeiv2_driver_set_hmax()

```
integer(fgsl_int) function fgsl_odeiv2_driver_set_hmax (  
    type(fgsl_odeiv2_driver), intent(inout) d,  
    real(fgsl_double) hmax )
```

49.57.1.23 fgsl_odeiv2_driver_set_hmin()

```
integer(fgsl_int) function fgsl_odeiv2_driver_set_hmin (  
    type(fgsl_odeiv2_driver), intent(inout) d,  
    real(fgsl_double) hmin )
```

49.57.1.24 fgsl_odeiv2_driver_set_nmax()

```
integer(fgsl_int) function fgsl_odeiv2_driver_set_nmax (  
    type(fgsl_odeiv2_driver), intent(inout) d,  
    integer(fgsl_long) nmax )
```

49.57.1.25 fgsl_odeiv2_driver_status()

```
logical function fgsl_odeiv2_driver_status (
    type(fgsl_odeiv2_driver), intent(in) s )
```

49.57.1.26 fgsl_odeiv2_evolve_alloc()

```
type(fgsl_odeiv2_evolve) function fgsl_odeiv2_evolve_alloc (
    integer(fgsl_size_t), intent(in) dim )
```

49.57.1.27 fgsl_odeiv2_evolve_apply()

```
integer(fgsl_int) function fgsl_odeiv2_evolve_apply (
    type(fgsl_odeiv2_evolve), intent(inout) e,
    type(fgsl_odeiv2_control), intent(inout) con,
    type(fgsl_odeiv2_step), intent(inout) step,
    type(fgsl_odeiv2_system), intent(in) dydt,
    real(fgsl_double), intent(inout) t,
    real(fgsl_double), intent(in) t1,
    real(fgsl_double), intent(inout) h,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous y )
```

49.57.1.28 fgsl_odeiv2_evolve_apply_fixed_step()

```
integer(fgsl_int) function fgsl_odeiv2_evolve_apply_fixed_step (
    type(fgsl_odeiv2_evolve), intent(inout) e,
    type(fgsl_odeiv2_control), intent(inout) con,
    type(fgsl_odeiv2_step), intent(inout) step,
    type(fgsl_odeiv2_system), intent(in) dydt,
    real(fgsl_double), intent(inout) t,
    real(fgsl_double), intent(in) h0,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous y )
```

49.57.1.29 fgsl_odeiv2_evolve_free()

```
subroutine fgsl_odeiv2_evolve_free (
    type(fgsl_odeiv2_evolve), intent(inout) s )
```


49.57.1.30 fgsl_odeiv2_evolve_reset()

```
integer(c_int) function fgsl_odeiv2_evolve_reset (  
    type(fgsl_odeiv2_evolve), intent(inout) s )
```

49.57.1.31 fgsl_odeiv2_evolve_set_driver()

```
integer(fgsl_int) function fgsl_odeiv2_evolve_set_driver (  
    type(fgsl_odeiv2_evolve), intent(inout) c,  
    type(fgsl_odeiv2_driver), intent(in) d )
```

49.57.1.32 fgsl_odeiv2_evolve_status()

```
logical function fgsl_odeiv2_evolve_status (  
    type(fgsl_odeiv2_evolve), intent(in) s )
```

49.57.1.33 fgsl_odeiv2_step_alloc()

```
type(fgsl_odeiv2_step) function fgsl_odeiv2_step_alloc (  
    type(fgsl_odeiv2_step_type), intent(in) t,  
    integer(fgsl_size_t), intent(in) dim )
```

49.57.1.34 fgsl_odeiv2_step_apply()

```
integer(fgsl_int) function fgsl_odeiv2_step_apply (  
    type(fgsl_odeiv2_step), intent(in) s,  
    real(fgsl_double), intent(in) t,  
    real(fgsl_double), intent(in) h,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous y,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous yerr,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous dydt_in,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous dydt_out,  
    type(fgsl_odeiv2_system), intent(in) dydt )
```

49.57.1.35 fgsl_odeiv2_step_free()

```
subroutine fgsl_odeiv2_step_free (  
    type(fgsl_odeiv2_step), intent(inout) s )
```

49.57.1.36 fgsl_odeiv2_step_name()

```
character(kind=fgsl_char, len=fgsl_strmax) function fgsl_odeiv2_step_name (
    type(fgsl_odeiv2_step), intent(in) s )
```

49.57.1.37 fgsl_odeiv2_step_order()

```
integer(fgsl_int) function fgsl_odeiv2_step_order (
    type(fgsl_odeiv2_step), intent(in) s )
```

49.57.1.38 fgsl_odeiv2_step_reset()

```
integer(fgsl_int) function fgsl_odeiv2_step_reset (
    type(fgsl_odeiv2_step), intent(inout) s )
```

49.57.1.39 fgsl_odeiv2_step_set_driver()

```
integer(c_int) function fgsl_odeiv2_step_set_driver (
    type(fgsl_odeiv2_step) s,
    type(fgsl_odeiv2_driver), intent(in) d )
```

49.57.1.40 fgsl_odeiv2_step_status()

```
logical function fgsl_odeiv2_step_status (
    type(fgsl_odeiv2_step), intent(in) s )
```

49.57.1.41 fgsl_odeiv2_system_free()

```
subroutine fgsl_odeiv2_system_free (
    type(fgsl_odeiv2_system), intent(inout) system )
```

49.57.1.42 fgsl_odeiv2_system_init()

```
type(fgsl_odeiv2_system) function fgsl_odeiv2_system_init (
    func,
    integer(fgsl_size_t) dimension,
    type(c_ptr), intent(in), optional params,
    optional jacobian )
```

Constructor for an ODE system object.

Parameters

<i>func</i>	- interface for a double precision vector valued function with derivatives and a parameter of arbitrary type
<i>dimension</i>	- number of components of the vector function
<i>params</i>	- parameter of arbitrary type
<i>jacobian</i>	- interface for the jacobian of func

Returns

ODE system object.

49.57.1.43 fgsl_odeiv2_system_status()

```
logical function fgsl_odeiv2_system_status (
    type(fgsl_odeiv2_system), intent(in) s )
```

49.57.1.44 fgsl_odeiv_control_alloc()

```
type(fgsl_odeiv_control) function fgsl_odeiv_control_alloc (
    type(fgsl_odeiv_control_type), intent(in) t )
```

Note: Use of fgsl_odeiv_control_alloc requires an initializer for the t object written in C.

49.57.1.45 fgsl_odeiv_control_free()

```
subroutine fgsl_odeiv_control_free (
    type(fgsl_odeiv_control), intent(inout) c )
```

49.57.1.46 fgsl_odeiv_control_hadjust()

```
integer(fgsl_int) function fgsl_odeiv_control_hadjust (
    type(fgsl_odeiv_control), intent(in) c,
    type(fgsl_odeiv_step), intent(in) s,
    real(fgsl_double), dimension(:), intent(in), target, contiguous y0,
    real(fgsl_double), dimension(:), intent(in), target, contiguous yerr,
    real(fgsl_double), dimension(:), intent(in), target, contiguous dydt,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous h )
```

49.57.1.47 fgsl_odeiv_control_init()

```
integer(fgsl_int) function fgsl_odeiv_control_init (  
    type(fgsl_odeiv_control), intent(in) c,  
    real(fgsl_double), intent(in) eps_abs,  
    real(fgsl_double), intent(in) eps_rel,  
    real(fgsl_double), intent(in) a_y,  
    real(fgsl_double), intent(in) a_dydt )
```

49.57.1.48 fgsl_odeiv_control_name()

```
character(kind=fgsl_char, len=fgsl_strmax) function fgsl_odeiv_control_name (  
    type(fgsl_odeiv_control), intent(in) c )
```

49.57.1.49 fgsl_odeiv_control_scaled_new()

```
type(fgsl_odeiv_control) function fgsl_odeiv_control_scaled_new (  
    real(fgsl_double), intent(in) eps_abs,  
    real(fgsl_double), intent(in) eps_rel,  
    real(fgsl_double), intent(in) a_y,  
    real(fgsl_double), intent(in) a_dydt,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous scale_abs )
```

49.57.1.50 fgsl_odeiv_control_standard_new()

```
type(fgsl_odeiv_control) function fgsl_odeiv_control_standard_new (  
    real(fgsl_double), intent(in) eps_abs,  
    real(fgsl_double), intent(in) eps_rel,  
    real(fgsl_double), intent(in) a_y,  
    real(fgsl_double), intent(in) a_dydt )
```

49.57.1.51 fgsl_odeiv_control_status()

```
logical function fgsl_odeiv_control_status (  
    type(fgsl_odeiv_control), intent(in) s )
```

49.57.1.52 fgsl_odeiv_control_y_new()

```
type(fgsl_odeiv_control) function fgsl_odeiv_control_y_new (
    real(fgsl_double), intent(in) eps_abs,
    real(fgsl_double), intent(in) eps_rel )
```

49.57.1.53 fgsl_odeiv_control_yp_new()

```
type(fgsl_odeiv_control) function fgsl_odeiv_control_yp_new (
    real(fgsl_double), intent(in) eps_abs,
    real(fgsl_double), intent(in) eps_rel )
```

49.57.1.54 fgsl_odeiv_evolve_alloc()

```
type(fgsl_odeiv_evolve) function fgsl_odeiv_evolve_alloc (
    integer(fgsl_size_t), intent(in) dim )
```

49.57.1.55 fgsl_odeiv_evolve_apply()

```
integer(fgsl_int) function fgsl_odeiv_evolve_apply (
    type(fgsl_odeiv_evolve), intent(inout) e,
    type(fgsl_odeiv_control), intent(inout) con,
    type(fgsl_odeiv_step), intent(inout) step,
    type(fgsl_odeiv_system), intent(in) dydt,
    real(fgsl_double), intent(inout) t,
    real(fgsl_double), intent(in) t1,
    real(fgsl_double), intent(inout) h,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous y )
```

49.57.1.56 fgsl_odeiv_evolve_free()

```
subroutine fgsl_odeiv_evolve_free (
    type(fgsl_odeiv_evolve), intent(inout) s )
```

49.57.1.57 fgsl_odeiv_evolve_reset()

```
integer(c_int) function fgsl_odeiv_evolve_reset (
    type(fgsl_odeiv_evolve), intent(inout) s )
```

49.57.1.58 fgsl_odeiv_evolve_status()

```
logical function fgsl_odeiv_evolve_status (
    type(fgsl_odeiv_evolve), intent(in) s )
```

49.57.1.59 fgsl_odeiv_step_alloc()

```
type(fgsl_odeiv_step) function fgsl_odeiv_step_alloc (
    type(fgsl_odeiv_step_type), intent(in) t,
    integer(fgsl_size_t), intent(in) dim )
```

49.57.1.60 fgsl_odeiv_step_apply()

```
integer(fgsl_int) function fgsl_odeiv_step_apply (
    type(fgsl_odeiv_step), intent(in) s,
    real(fgsl_double), intent(in) t,
    real(fgsl_double), intent(in) h,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous y,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous yerr,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous dydt_in,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous dydt_out,
    type(fgsl_odeiv_system), intent(in) dydt )
```

49.57.1.61 fgsl_odeiv_step_free()

```
subroutine fgsl_odeiv_step_free (
    type(fgsl_odeiv_step), intent(inout) s )
```

49.57.1.62 fgsl_odeiv_step_name()

```
character(kind=fgsl_char, len=fgsl_strmax) function fgsl_odeiv_step_name (
    type(fgsl_odeiv_step), intent(in) s )
```

49.57.1.63 fgsl_odeiv_step_order()

```
integer(fgsl_int) function fgsl_odeiv_step_order (
    type(fgsl_odeiv_step), intent(in) s )
```

49.57.1.64 fgsl_odeiv_step_reset()

```
integer(fgsl_int) function fgsl_odeiv_step_reset (
    type(fgsl_odeiv_step), intent(inout) s )
```

49.57.1.65 fgsl_odeiv_step_status()

```
logical function fgsl_odeiv_step_status (
    type(fgsl_odeiv_step), intent(in) s )
```

49.57.1.66 fgsl_odeiv_system_free()

```
subroutine fgsl_odeiv_system_free (
    type(fgsl_odeiv_system), intent(inout) system )
```

49.57.1.67 fgsl_odeiv_system_init()

```
type(fgsl_odeiv_system) function fgsl_odeiv_system_init (
    func,
    integer(fgsl_size_t) dimension,
    type(c_ptr), intent(in), optional params,
    optional jacobian )
```

Constructor for an ODE system object.

Parameters

<i>func</i>	- interface for a double precision vector valued function with derivatives and a parameter of arbitrary type
<i>dimension</i>	- number of components of the vector function
<i>params</i>	- parameter of arbitrary type
<i>jacobian</i>	- interface for the jacobian of func

Returns

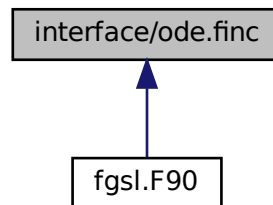
ODE system object.

49.57.1.68 fgsl_odeiv_system_status()

```
logical function fgsl_odeiv_system_status (
    type(fgsl_odeiv_system), intent(in) s )
```

49.58 interface/ode.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [fgsl_odeiv2_system_cinit](#) (func, dimension, params, jacobian)
- subroutine [fgsl_odeiv2_system_cfree](#) (system)
- type(c_ptr) function [gsl_odeiv2_step_alloc](#) (t, dim)
- integer(c_int) function [gsl_odeiv2_step_reset](#) (s)
- subroutine [gsl_odeiv2_step_free](#) (s)
- type(c_ptr) function [gsl_odeiv2_step_name](#) (s)
- integer(c_int) function [gsl_odeiv2_step_order](#) (s)
- integer(c_int) function [gsl_odeiv2_step_set_driver](#) (s, d)
- integer(c_int) function [gsl_odeiv2_step_apply](#) (s, t, h, y, yerr, dydt_in, dydt_out, dydt)
- type(c_ptr) function [fgsl_aux_odeiv2_step_alloc](#) (step_type)
- type(c_ptr) function [gsl_odeiv2_control_standard_new](#) (eps_abs, eps_rel, a_y, a_dydt)
- type(c_ptr) function [gsl_odeiv2_control_y_new](#) (eps_abs, eps_rel)
- type(c_ptr) function [gsl_odeiv2_control_yp_new](#) (eps_abs, eps_rel)
- type(c_ptr) function [gsl_odeiv2_control_scaled_new](#) (eps_abs, eps_rel, a_y, a_dydt, scale_abs, dim)
- type(c_ptr) function [gsl_odeiv2_control_alloc](#) (t)
- integer(c_int) function [gsl_odeiv2_control_init](#) (c, eps_abs, eps_rel, a_y, a_dydt)
- subroutine [gsl_odeiv2_control_free](#) (c)
- integer(c_int) function [gsl_odeiv2_control_hadjust](#) (c, s, y, yerr, dydt, h)
- type(c_ptr) function [gsl_odeiv2_control_name](#) (c)
- integer(c_int) function [gsl_odeiv2_control_errlevel](#) (c, y, dydt, h, ind, errlev)
- integer(c_int) function [gsl_odeiv2_control_set_driver](#) (c, d)
- type(c_ptr) function [gsl_odeiv2_evolve_alloc](#) (dim)
- integer(c_int) function [gsl_odeiv2_evolve_apply](#) (e, con, step, sys, t, t1, h, y)
- integer(c_int) function [gsl_odeiv2_evolve_apply_fixed_step](#) (e, con, step, dydt, t, h0, y)
- integer(c_int) function [gsl_odeiv2_evolve_reset](#) (s)
- subroutine [gsl_odeiv2_evolve_free](#) (s)
- integer(c_int) function [gsl_odeiv2_evolve_set_driver](#) (c, d)
- type(c_ptr) function [gsl_odeiv2_driver_alloc_y_new](#) (sys, t, hstart, epsabs, epsrel)
- type(c_ptr) function [gsl_odeiv2_driver_alloc_yp_new](#) (sys, t, hstart, epsabs, epsrel)
- type(c_ptr) function [gsl_odeiv2_driver_alloc_standard_new](#) (sys, t, hstart, epsabs, epsrel, a_y, a_dydt)
- type(c_ptr) function [gsl_odeiv2_driver_alloc_scaled_new](#) (sys, t, hstart, epsabs, epsrel, a_y, a_dydt, scale_abs)
- integer(c_int) function [gsl_odeiv2_driver_set_hmin](#) (d, hmin)

- integer(c_int) function [gsl_odeiv2_driver_set_hmax](#) (d, hmax)
- integer(c_int) function [gsl_odeiv2_driver_set_nmax](#) (d, nmax)
- integer(c_int) function [gsl_odeiv2_driver_apply](#) (d, t, t1, y)
- integer(c_int) function [gsl_odeiv2_driver_apply_fixed_step](#) (d, t, h, n, y)
- integer(c_int) function [gsl_odeiv2_driver_reset](#) (d)
- subroutine [gsl_odeiv2_driver_free](#) (d)
- integer(c_int) function [gsl_odeiv2_driver_reset_hstart](#) (d, hstart)
- type(c_ptr) function [gsl_odeiv_step_alloc](#) (t, dim)
- type(c_ptr) function [fgsl_aux_odeiv_step_alloc](#) (step_type)
- type(c_ptr) function [fgsl_odeiv_system_cinit](#) (func, dimension, params, jacobian)
- subroutine [fgsl_odeiv_system_cfree](#) (system)
- integer(c_int) function [gsl_odeiv_step_reset](#) (s)
- subroutine [gsl_odeiv_step_free](#) (s)
- type(c_ptr) function [gsl_odeiv_step_name](#) (s)
- integer(c_int) function [gsl_odeiv_step_order](#) (s)
- integer(c_int) function [gsl_odeiv_step_apply](#) (s, t, h, y, yerr, dydt_in, dydt_out, dydt)
- type(c_ptr) function [gsl_odeiv_control_standard_new](#) (eps_abs, eps_rel, a_y, a_dydt)
- type(c_ptr) function [gsl_odeiv_control_y_new](#) (eps_abs, eps_rel)
- type(c_ptr) function [gsl_odeiv_control_yp_new](#) (eps_abs, eps_rel)
- type(c_ptr) function [gsl_odeiv_control_scaled_new](#) (eps_abs, eps_rel, a_y, a_dydt, scale_abs, dim)
- type(c_ptr) function [gsl_odeiv_control_alloc](#) (t)
- integer(c_int) function [gsl_odeiv_control_init](#) (c, eps_abs, eps_rel, a_y, a_dydt)
- subroutine [gsl_odeiv_control_free](#) (c)
- integer(c_int) function [gsl_odeiv_control_hadjust](#) (c, s, y0, yerr, dydt, h)
- type(c_ptr) function [gsl_odeiv_control_name](#) (c)
- type(c_ptr) function [gsl_odeiv_evolve_alloc](#) (dim)
- integer(c_int) function [gsl_odeiv_evolve_apply](#) (e, con, step, dydt, t, t1, h, y)
- integer(c_int) function [gsl_odeiv_evolve_reset](#) (s)
- subroutine [gsl_odeiv_evolve_free](#) (s)

49.58.1 Function/Subroutine Documentation

49.58.1.1 fgsl_aux_odeiv2_step_alloc()

```
type(c_ptr) function fgsl_aux_odeiv2_step_alloc (
    integer(c_int), value step_type )
```

49.58.1.2 fgsl_aux_odeiv_step_alloc()

```
type(c_ptr) function fgsl_aux_odeiv_step_alloc (
    integer(c_int), value step_type )
```

49.58.1.3 fgsl_odeiv2_system_cfree()

```
subroutine fgsl_odeiv2_system_cfree (  
    type(c_ptr), value system )
```

49.58.1.4 fgsl_odeiv2_system_cinit()

```
type(c_ptr) function fgsl_odeiv2_system_cinit (  
    type(c_funptr), value func,  
    integer(c_size_t), value dimension,  
    type(c_ptr), value params,  
    type(c_funptr), value jacobian )
```

49.58.1.5 fgsl_odeiv_system_cfree()

```
subroutine fgsl_odeiv_system_cfree (  
    type(c_ptr), value system )
```

49.58.1.6 fgsl_odeiv_system_cinit()

```
type(c_ptr) function fgsl_odeiv_system_cinit (  
    type(c_funptr), value func,  
    integer(c_size_t), value dimension,  
    type(c_ptr), value params,  
    type(c_funptr), value jacobian )
```

49.58.1.7 gsl_odeiv2_control_alloc()

```
type(c_ptr) function gsl_odeiv2_control_alloc (  
    type(c_ptr), value t )
```

49.58.1.8 gsl_odeiv2_control_errlevel()

```
integer(c_int) function gsl_odeiv2_control_errlevel (  
    type(c_ptr), value c,  
    real(c_double), value y,  
    real(c_double), value dydt,  
    real(c_double), value h,  
    integer(c_size_t), value ind,  
    real(c_double) errlev )
```

49.58.1.9 gsl_odeiv2_control_free()

```
subroutine gsl_odeiv2_control_free (
    type(c_ptr), value c )
```

49.58.1.10 gsl_odeiv2_control_hadjust()

```
integer(c_int) function gsl_odeiv2_control_hadjust (
    type(c_ptr), value c,
    type(c_ptr), value s,
    type(c_ptr), value y,
    type(c_ptr), value yerr,
    type(c_ptr), value dydt,
    real(c_double) h )
```

49.58.1.11 gsl_odeiv2_control_init()

```
integer(c_int) function gsl_odeiv2_control_init (
    type(c_ptr), value c,
    real(c_double), value eps_abs,
    real(c_double), value eps_rel,
    real(c_double), value a_y,
    real(c_double), value a_dydt )
```

49.58.1.12 gsl_odeiv2_control_name()

```
type(c_ptr) function gsl_odeiv2_control_name (
    type(c_ptr), value c )
```

49.58.1.13 gsl_odeiv2_control_scaled_new()

```
type(c_ptr) function gsl_odeiv2_control_scaled_new (
    real(c_double), value eps_abs,
    real(c_double), value eps_rel,
    real(c_double), value a_y,
    real(c_double), value a_dydt,
    type(c_ptr), value scale_abs,
    integer(c_size_t), value dim )
```

49.58.1.14 gsl_odeiv2_control_set_driver()

```
integer(c_int) function gsl_odeiv2_control_set_driver (  
    type(c_ptr), value c,  
    type(c_ptr), value d )
```

49.58.1.15 gsl_odeiv2_control_standard_new()

```
type(c_ptr) function gsl_odeiv2_control_standard_new (  
    real(c_double), value eps_abs,  
    real(c_double), value eps_rel,  
    real(c_double), value a_y,  
    real(c_double), value a_dydt )
```

49.58.1.16 gsl_odeiv2_control_y_new()

```
type(c_ptr) function gsl_odeiv2_control_y_new (  
    real(c_double), value eps_abs,  
    real(c_double), value eps_rel )
```

49.58.1.17 gsl_odeiv2_control_yp_new()

```
type(c_ptr) function gsl_odeiv2_control_yp_new (  
    real(c_double), value eps_abs,  
    real(c_double), value eps_rel )
```

49.58.1.18 gsl_odeiv2_driver_alloc_scaled_new()

```
type(c_ptr) function gsl_odeiv2_driver_alloc_scaled_new (  
    type(c_ptr), value sys,  
    type(c_ptr), value t,  
    real(c_double), value hstart,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    real(c_double), value a_y,  
    real(c_double), value a_dydt,  
    real(c_double), dimension(*) scale_abs )
```

49.58.1.19 gsl_odeiv2_driver_alloc_standard_new()

```
type(c_ptr) function gsl_odeiv2_driver_alloc_standard_new (  
    type(c_ptr), value sys,  
    type(c_ptr), value t,  
    real(c_double), value hstart,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel,  
    real(c_double), value a_y,  
    real(c_double), value a_dydt )
```

49.58.1.20 gsl_odeiv2_driver_alloc_y_new()

```
type(c_ptr) function gsl_odeiv2_driver_alloc_y_new (  
    type(c_ptr), value sys,  
    type(c_ptr), value t,  
    real(c_double), value hstart,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel )
```

49.58.1.21 gsl_odeiv2_driver_alloc_yp_new()

```
type(c_ptr) function gsl_odeiv2_driver_alloc_yp_new (  
    type(c_ptr), value sys,  
    type(c_ptr), value t,  
    real(c_double), value hstart,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel )
```

49.58.1.22 gsl_odeiv2_driver_apply()

```
integer(c_int) function gsl_odeiv2_driver_apply (  
    type(c_ptr), value d,  
    real(c_double) t,  
    real(c_double), value t1,  
    real(c_double), dimension(*) y )
```

49.58.1.23 gsl_odeiv2_driver_apply_fixed_step()

```
integer(c_int) function gsl_odeiv2_driver_apply_fixed_step (  
    type(c_ptr), value d,  
    real(c_double) t,  
    real(c_double), value h,  
    integer(c_long), value n,  
    real(c_double), dimension(*) y )
```

49.58.1.24 gsl_odeiv2_driver_free()

```
subroutine gsl_odeiv2_driver_free (  
    type(c_ptr), value d )
```

49.58.1.25 gsl_odeiv2_driver_reset()

```
integer(c_int) function gsl_odeiv2_driver_reset (  
    type(c_ptr), value d )
```

49.58.1.26 gsl_odeiv2_driver_reset_hstart()

```
integer(c_int) function gsl_odeiv2_driver_reset_hstart (  
    type(c_ptr), value d,  
    real(c_double), value hstart )
```

49.58.1.27 gsl_odeiv2_driver_set_hmax()

```
integer(c_int) function gsl_odeiv2_driver_set_hmax (  
    type(c_ptr), value d,  
    real(c_double), value hmax )
```

49.58.1.28 gsl_odeiv2_driver_set_hmin()

```
integer(c_int) function gsl_odeiv2_driver_set_hmin (  
    type(c_ptr), value d,  
    real(c_double), value hmin )
```

49.58.1.29 gsl_odeiv2_driver_set_nmax()

```
integer(c_int) function gsl_odeiv2_driver_set_nmax (  
    type(c_ptr), value d,  
    integer(c_long), value nmax )
```

49.58.1.30 gsl_odeiv2_evolve_alloc()

```
type(c_ptr) function gsl_odeiv2_evolve_alloc (
    integer(c_size_t), value dim )
```

49.58.1.31 gsl_odeiv2_evolve_apply()

```
integer(c_int) function gsl_odeiv2_evolve_apply (
    type(c_ptr), value e,
    type(c_ptr), value con,
    type(c_ptr), value step,
    type(c_ptr), value sys,
    real(c_double) t,
    real(c_double), value t1,
    real(c_double) h,
    type(c_ptr), value y )
```

49.58.1.32 gsl_odeiv2_evolve_apply_fixed_step()

```
integer(c_int) function gsl_odeiv2_evolve_apply_fixed_step (
    type(c_ptr), value e,
    type(c_ptr), value con,
    type(c_ptr), value step,
    type(c_ptr), value dydt,
    real(c_double) t,
    real(c_double), value h0,
    type(c_ptr), value y )
```

49.58.1.33 gsl_odeiv2_evolve_free()

```
subroutine gsl_odeiv2_evolve_free (
    type(c_ptr), value s )
```

49.58.1.34 gsl_odeiv2_evolve_reset()

```
integer(c_int) function gsl_odeiv2_evolve_reset (
    type(c_ptr), value s )
```

49.58.1.35 gsl_odeiv2_evolve_set_driver()

```
integer(c_int) function gsl_odeiv2_evolve_set_driver (  
    type(c_ptr), value c,  
    type(c_ptr), value d )
```

49.58.1.36 gsl_odeiv2_step_alloc()

```
type(c_ptr) function gsl_odeiv2_step_alloc (  
    type(c_ptr), value t,  
    integer(c_size_t), value dim )
```

49.58.1.37 gsl_odeiv2_step_apply()

```
integer(c_int) function gsl_odeiv2_step_apply (  
    type(c_ptr), value s,  
    real(c_double), value t,  
    real(c_double), value h,  
    type(c_ptr), value y,  
    type(c_ptr), value yerr,  
    type(c_ptr), value dydt_in,  
    type(c_ptr), value dydt_out,  
    type(c_ptr), value dydt )
```

49.58.1.38 gsl_odeiv2_step_free()

```
subroutine gsl_odeiv2_step_free (  
    type(c_ptr), value s )
```

49.58.1.39 gsl_odeiv2_step_name()

```
type(c_ptr) function gsl_odeiv2_step_name (  
    type(c_ptr), value s )
```

49.58.1.40 gsl_odeiv2_step_order()

```
integer(c_int) function gsl_odeiv2_step_order (  
    type(c_ptr), value s )
```


49.58.1.41 gsl_odeiv2_step_reset()

```
integer(c_int) function gsl_odeiv2_step_reset (  
    type(c_ptr), value s )
```

49.58.1.42 gsl_odeiv2_step_set_driver()

```
integer(c_int) function gsl_odeiv2_step_set_driver (  
    type(c_ptr), value s,  
    type(c_ptr), value d )
```

49.58.1.43 gsl_odeiv_control_alloc()

```
type(c_ptr) function gsl_odeiv_control_alloc (  
    type(c_ptr), value t )
```

49.58.1.44 gsl_odeiv_control_free()

```
subroutine gsl_odeiv_control_free (  
    type(c_ptr), value c )
```

49.58.1.45 gsl_odeiv_control_hadjust()

```
integer(c_int) function gsl_odeiv_control_hadjust (  
    type(c_ptr), value c,  
    type(c_ptr), value s,  
    type(c_ptr), value y0,  
    type(c_ptr), value yerr,  
    type(c_ptr), value dydt,  
    type(c_ptr), value h )
```

49.58.1.46 gsl_odeiv_control_init()

```
integer(c_int) function gsl_odeiv_control_init (  
    type(c_ptr), value c,  
    real(c_double), value eps_abs,  
    real(c_double), value eps_rel,  
    real(c_double), value a_y,  
    real(c_double), value a_dydt )
```

49.58.1.47 gsl_odeiv_control_name()

```
type(c_ptr) function gsl_odeiv_control_name (  
    type(c_ptr), value c )
```

49.58.1.48 gsl_odeiv_control_scaled_new()

```
type(c_ptr) function gsl_odeiv_control_scaled_new (  
    real(c_double), value eps_abs,  
    real(c_double), value eps_rel,  
    real(c_double), value a_y,  
    real(c_double), value a_dydt,  
    type(c_ptr), value scale_abs,  
    integer(c_size_t), value dim )
```

49.58.1.49 gsl_odeiv_control_standard_new()

```
type(c_ptr) function gsl_odeiv_control_standard_new (  
    real(c_double), value eps_abs,  
    real(c_double), value eps_rel,  
    real(c_double), value a_y,  
    real(c_double), value a_dydt )
```

49.58.1.50 gsl_odeiv_control_y_new()

```
type(c_ptr) function gsl_odeiv_control_y_new (  
    real(c_double), value eps_abs,  
    real(c_double), value eps_rel )
```

49.58.1.51 gsl_odeiv_control_yp_new()

```
type(c_ptr) function gsl_odeiv_control_yp_new (  
    real(c_double), value eps_abs,  
    real(c_double), value eps_rel )
```

49.58.1.52 gsl_odeiv_evolve_alloc()

```
type(c_ptr) function gsl_odeiv_evolve_alloc (  
    integer(c_size_t), value dim )
```

49.58.1.53 gsl_odeiv_evolve_apply()

```
integer(c_int) function gsl_odeiv_evolve_apply (
    type(c_ptr), value e,
    type(c_ptr), value con,
    type(c_ptr), value step,
    type(c_ptr), value dydt,
    real(c_double) t,
    real(c_double), value t1,
    real(c_double) h,
    type(c_ptr), value y )
```

49.58.1.54 gsl_odeiv_evolve_free()

```
subroutine gsl_odeiv_evolve_free (
    type(c_ptr), value s )
```

49.58.1.55 gsl_odeiv_evolve_reset()

```
integer(c_int) function gsl_odeiv_evolve_reset (
    type(c_ptr), value s )
```

49.58.1.56 gsl_odeiv_step_alloc()

```
type(c_ptr) function gsl_odeiv_step_alloc (
    type(c_ptr), value t,
    integer(c_size_t), value dim )
```

49.58.1.57 gsl_odeiv_step_apply()

```
integer(c_int) function gsl_odeiv_step_apply (
    type(c_ptr), value s,
    real(c_double), value t,
    real(c_double), value h,
    type(c_ptr), value y,
    type(c_ptr), value yerr,
    type(c_ptr), value dydt_in,
    type(c_ptr), value dydt_out,
    type(c_ptr), value dydt )
```

49.58.1.58 gsl_odeiv_step_free()

```
subroutine gsl_odeiv_step_free (
    type(c_ptr), value s )
```

49.58.1.59 gsl_odeiv_step_name()

```
type(c_ptr) function gsl_odeiv_step_name (
    type(c_ptr), value s )
```

49.58.1.60 gsl_odeiv_step_order()

```
integer(c_int) function gsl_odeiv_step_order (
    type(c_ptr), value s )
```

49.58.1.61 gsl_odeiv_step_reset()

```
integer(c_int) function gsl_odeiv_step_reset (
    type(c_ptr), value s )
```

49.59 api/permutation.finc File Reference**Functions/Subroutines**

- type(fgsl_permutation) function [fgsl_permutation_alloc](#) (n)
- type(fgsl_permutation) function [fgsl_permutation_calloc](#) (n)
- subroutine [fgsl_permutation_init](#) (p)
- subroutine [fgsl_permutation_free](#) (p)
- integer(fgsl_int) function [fgsl_permutation_memcpy](#) (dest, src)
- integer(fgsl_size_t) function [fgsl_permutation_get](#) (p, i)
- integer(fgsl_int) function [fgsl_permutation_swap](#) (p, i, j)
- integer(fgsl_size_t) function [fgsl_permutation_size](#) (p)
- integer(fgsl_size_t) function, dimension(:), pointer [fgsl_permutation_data](#) (p)
- integer(fgsl_int) function [fgsl_permutation_valid](#) (p)
- subroutine [fgsl_permutation_reverse](#) (p)
- integer(fgsl_int) function [fgsl_permutation_inverse](#) (inv, p)
- integer(fgsl_int) function [fgsl_permutation_next](#) (p)
- integer(fgsl_int) function [fgsl_permutation_prev](#) (p)
- integer(fgsl_int) function [fgsl_permute](#) (p, data, stride, n)
- integer(fgsl_int) function [fgsl_permute_long](#) (p, data, stride, n)
- integer(fgsl_int) function [fgsl_permute_inverse](#) (p, data, stride, n)
- integer(fgsl_int) function [fgsl_permute_long_inverse](#) (p, data, stride, n)
- integer(fgsl_int) function [fgsl_permute_vector](#) (p, v)

- integer(fgsl_int) function [fgsl_permute_vector_inverse](#) (p, v)
- integer(fgsl_int) function [fgsl_permute_matrix](#) (p, a)
- integer(fgsl_int) function [fgsl_permutation_mul](#) (p, pa, pb)
- integer(fgsl_int) function [fgsl_permutation_fwrite](#) (stream, p)
- integer(fgsl_int) function [fgsl_permutation_fread](#) (stream, p)
- integer(fgsl_int) function [fgsl_permutation_fprintf](#) (stream, p, format)
- integer(fgsl_int) function [fgsl_permutation_fscanf](#) (stream, p)
- integer(fgsl_int) function [fgsl_permutation_linear_to_canonical](#) (q, p)
- integer(fgsl_int) function [fgsl_permutation_canonical_to_linear](#) (p, q)
- integer(fgsl_size_t) function [fgsl_permutation_inversions](#) (p)
- integer(fgsl_size_t) function [fgsl_permutation_linear_cycles](#) (p)
- integer(fgsl_size_t) function [fgsl_permutation_canonical_cycles](#) (p)
- type(fgsl_combination) function [fgsl_combination_alloc](#) (n, k)
- type(fgsl_combination) function [fgsl_combination_calloc](#) (n, k)
- subroutine [fgsl_combination_init_first](#) (c)
- subroutine [fgsl_combination_init_last](#) (c)
- subroutine [fgsl_combination_free](#) (c)
- integer(fgsl_int) function [fgsl_combination_memcpy](#) (dest, src)
- integer(fgsl_size_t) function [fgsl_combination_get](#) (c, i)
- integer(fgsl_size_t) function [fgsl_combination_n](#) (c)
- integer(fgsl_size_t) function [fgsl_combination_k](#) (c)
- integer(fgsl_size_t) function, dimension(:), pointer [fgsl_combination_data](#) (c)
- integer(fgsl_int) function [fgsl_combination_valid](#) (c)
- integer(fgsl_int) function [fgsl_combination_next](#) (c)
- integer(fgsl_int) function [fgsl_combination_prev](#) (c)
- integer(fgsl_int) function [fgsl_combination_fwrite](#) (stream, c)
- integer(fgsl_int) function [fgsl_combination_fread](#) (stream, c)
- integer(fgsl_int) function [fgsl_combination_fprintf](#) (stream, c, format)
- integer(fgsl_int) function [fgsl_combination_fscanf](#) (stream, c)
- type(fgsl_multiset) function [fgsl_multiset_alloc](#) (n, k)
- type(fgsl_multiset) function [fgsl_multiset_calloc](#) (n, k)
- subroutine [fgsl_multiset_init_first](#) (c)
- subroutine [fgsl_multiset_init_last](#) (c)
- subroutine [fgsl_multiset_free](#) (c)
- integer(fgsl_int) function [fgsl_multiset_memcpy](#) (dest, src)
- integer(fgsl_size_t) function [fgsl_multiset_get](#) (c, i)
- integer(fgsl_size_t) function [fgsl_multiset_n](#) (c)
- integer(fgsl_size_t) function [fgsl_multiset_k](#) (c)
- integer(fgsl_size_t) function, dimension(:), pointer [fgsl_multiset_data](#) (c)
- integer(fgsl_int) function [fgsl_multiset_valid](#) (c)
- integer(fgsl_int) function [fgsl_multiset_next](#) (c)
- integer(fgsl_int) function [fgsl_multiset_prev](#) (c)
- integer(fgsl_int) function [fgsl_multiset_fwrite](#) (stream, c)
- integer(fgsl_int) function [fgsl_multiset_fread](#) (stream, c)
- integer(fgsl_int) function [fgsl_multiset_fprintf](#) (stream, c, format)
- integer(fgsl_int) function [fgsl_multiset_fscanf](#) (stream, c)
- logical function [fgsl_permutation_status](#) (permutation)
- logical function [fgsl_combination_status](#) (combination)
- logical function [fgsl_multiset_status](#) (multiset)
- integer(fgsl_size_t) function [fgsl_sizeof_permutation](#) (p)
- integer(fgsl_size_t) function [fgsl_sizeof_combination](#) (c)
- integer(fgsl_size_t) function [fgsl_sizeof_multiset](#) (c)

49.59.1 Function/Subroutine Documentation

49.59.1.1 fgsl_combination_alloc()

```
type(fgsl_combination) function fgsl_combination_alloc (  
    integer(fgsl_size_t), intent(in) n,  
    integer(fgsl_size_t), intent(in) k )
```

49.59.1.2 fgsl_combination_calloc()

```
type(fgsl_combination) function fgsl_combination_calloc (  
    integer(fgsl_size_t), intent(in) n,  
    integer(fgsl_size_t), intent(in) k )
```

49.59.1.3 fgsl_combination_data()

```
integer(fgsl_size_t) function, dimension(:), pointer fgsl_combination_data (  
    type(fgsl_combination), intent(in) c )
```

49.59.1.4 fgsl_combination_fprintf()

```
integer(fgsl_int) function fgsl_combination_fprintf (  
    type(fgsl_file), intent(in) stream,  
    type(fgsl_combination), intent(in) c,  
    character(kind=fgsl_char, len=*), intent(in) format )
```

49.59.1.5 fgsl_combination_fread()

```
integer(fgsl_int) function fgsl_combination_fread (  
    type(fgsl_file), intent(in) stream,  
    type(fgsl_combination), intent(inout) c )
```

49.59.1.6 fgsl_combination_free()

```
subroutine fgsl_combination_free (  
    type(fgsl_combination), intent(inout) c )
```

49.59.1.7 fgsl_combination_fscanf()

```
integer(fgsl_int) function fgsl_combination_fscanf (
    type(fgsl_file), intent(in) stream,
    type(fgsl_combination), intent(inout) c )
```

49.59.1.8 fgsl_combination_fwrite()

```
integer(fgsl_int) function fgsl_combination_fwrite (
    type(fgsl_file), intent(in) stream,
    type(fgsl_combination), intent(in) c )
```

49.59.1.9 fgsl_combination_get()

```
integer(fgsl_size_t) function fgsl_combination_get (
    type(fgsl_combination), intent(inout) c,
    integer(fgsl_size_t), intent(in) i )
```

49.59.1.10 fgsl_combination_init_first()

```
subroutine fgsl_combination_init_first (
    type(fgsl_combination), intent(inout) c )
```

49.59.1.11 fgsl_combination_init_last()

```
subroutine fgsl_combination_init_last (
    type(fgsl_combination), intent(inout) c )
```

49.59.1.12 fgsl_combination_k()

```
integer(fgsl_size_t) function fgsl_combination_k (
    type(fgsl_combination), intent(in) c )
```

49.59.1.13 fgsl_combination_memcpy()

```
integer(fgsl_int) function fgsl_combination_memcpy (
    type(fgsl_combination), intent(inout) dest,
    type(fgsl_combination), intent(in) src )
```

49.59.1.14 fgsl_combination_n()

```
integer(fgsl_size_t) function fgsl_combination_n (
    type(fgsl_combination), intent(in) c )
```

49.59.1.15 fgsl_combination_next()

```
integer(fgsl_int) function fgsl_combination_next (
    type(fgsl_combination), intent(in) c )
```

49.59.1.16 fgsl_combination_prev()

```
integer(fgsl_int) function fgsl_combination_prev (
    type(fgsl_combination), intent(in) c )
```

49.59.1.17 fgsl_combination_status()

```
logical function fgsl_combination_status (
    type(fgsl_combination), intent(in) combination )
```

49.59.1.18 fgsl_combination_valid()

```
integer(fgsl_int) function fgsl_combination_valid (
    type(fgsl_combination), intent(in) c )
```

49.59.1.19 fgsl_multiset_alloc()

```
type(fgsl_multiset) function fgsl_multiset_alloc (
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) k )
```


49.59.1.20 fgsl_multiset_calloc()

```
type(fgsl_multiset) function fgsl_multiset_calloc (
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) k )
```

49.59.1.21 fgsl_multiset_data()

```
integer(fgsl_size_t) function, dimension(:), pointer fgsl_multiset_data (
    type(fgsl_multiset), intent(in) c )
```

49.59.1.22 fgsl_multiset_fprintf()

```
integer(fgsl_int) function fgsl_multiset_fprintf (
    type(fgsl_file), intent(in) stream,
    type(fgsl_multiset), intent(in) c,
    character(kind=fgsl_char, len=*), intent(in) format )
```

49.59.1.23 fgsl_multiset_fread()

```
integer(fgsl_int) function fgsl_multiset_fread (
    type(fgsl_file), intent(in) stream,
    type(fgsl_multiset), intent(inout) c )
```

49.59.1.24 fgsl_multiset_free()

```
subroutine fgsl_multiset_free (
    type(fgsl_multiset), intent(inout) c )
```

49.59.1.25 fgsl_multiset_fscanf()

```
integer(fgsl_int) function fgsl_multiset_fscanf (
    type(fgsl_file), intent(in) stream,
    type(fgsl_multiset), intent(inout) c )
```

49.59.1.26 fgsl_multiset_fwrite()

```
integer(fgsl_int) function fgsl_multiset_fwrite (  
    type(fgsl_file), intent(in) stream,  
    type(fgsl_multiset), intent(in) c )
```

49.59.1.27 fgsl_multiset_get()

```
integer(fgsl_size_t) function fgsl_multiset_get (  
    type(fgsl_multiset), intent(inout) c,  
    integer(fgsl_size_t), intent(in) i )
```

49.59.1.28 fgsl_multiset_init_first()

```
subroutine fgsl_multiset_init_first (  
    type(fgsl_multiset), intent(inout) c )
```

49.59.1.29 fgsl_multiset_init_last()

```
subroutine fgsl_multiset_init_last (  
    type(fgsl_multiset), intent(inout) c )
```

49.59.1.30 fgsl_multiset_k()

```
integer(fgsl_size_t) function fgsl_multiset_k (  
    type(fgsl_multiset), intent(in) c )
```

49.59.1.31 fgsl_multiset_memcpy()

```
integer(fgsl_int) function fgsl_multiset_memcpy (  
    type(fgsl_multiset), intent(inout) dest,  
    type(fgsl_multiset), intent(in) src )
```

49.59.1.32 fgsl_multiset_n()

```
integer(fgsl_size_t) function fgsl_multiset_n (  
    type(fgsl_multiset), intent(in) c )
```

49.59.1.33 fgsl_multiset_next()

```
integer(fgsl_int) function fgsl_multiset_next (  
    type(fgsl_multiset), intent(in) c )
```

49.59.1.34 fgsl_multiset_prev()

```
integer(fgsl_int) function fgsl_multiset_prev (  
    type(fgsl_multiset), intent(in) c )
```

49.59.1.35 fgsl_multiset_status()

```
logical function fgsl_multiset_status (  
    type(fgsl_multiset), intent(in) multiset )
```

49.59.1.36 fgsl_multiset_valid()

```
integer(fgsl_int) function fgsl_multiset_valid (  
    type(fgsl_multiset), intent(in) c )
```

49.59.1.37 fgsl_permutation_alloc()

```
type(fgsl_permutation) function fgsl_permutation_alloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.59.1.38 fgsl_permutation_calloc()

```
type(fgsl_permutation) function fgsl_permutation_calloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.59.1.39 fgsl_permutation_canonical_cycles()

```
integer(fgsl_size_t) function fgsl_permutation_canonical_cycles (  
    type(fgsl_permutation), intent(in) p )
```

49.59.1.40 fgsl_permutation_canonical_to_linear()

```
integer(fgsl_int) function fgsl_permutation_canonical_to_linear (  
    type(fgsl_permutation), intent(inout) p,  
    type(fgsl_permutation), intent(in) q )
```

49.59.1.41 fgsl_permutation_data()

```
integer(fgsl_size_t) function, dimension(:), pointer fgsl_permutation_data (  
    type(fgsl_permutation), intent(in) p )
```

49.59.1.42 fgsl_permutation_fprintf()

```
integer(fgsl_int) function fgsl_permutation_fprintf (  
    type(fgsl_file), intent(in) stream,  
    type(fgsl_permutation), intent(in) p,  
    character(kind=fgsl_char, len=*), intent(in) format )
```

49.59.1.43 fgsl_permutation_fread()

```
integer(fgsl_int) function fgsl_permutation_fread (  
    type(fgsl_file), intent(in) stream,  
    type(fgsl_permutation), intent(inout) p )
```

49.59.1.44 fgsl_permutation_free()

```
subroutine fgsl_permutation_free (  
    type(fgsl_permutation), intent(inout) p )
```

49.59.1.45 fgsl_permutation_fscanf()

```
integer(fgsl_int) function fgsl_permutation_fscanf (
    type(fgsl_file), intent(in) stream,
    type(fgsl_permutation), intent(inout) p )
```

49.59.1.46 fgsl_permutation_fwrite()

```
integer(fgsl_int) function fgsl_permutation_fwrite (
    type(fgsl_file), intent(in) stream,
    type(fgsl_permutation), intent(in) p )
```

49.59.1.47 fgsl_permutation_get()

```
integer(fgsl_size_t) function fgsl_permutation_get (
    type(fgsl_permutation), intent(inout) p,
    integer(fgsl_size_t), intent(in) i )
```

49.59.1.48 fgsl_permutation_init()

```
subroutine fgsl_permutation_init (
    type(fgsl_permutation), intent(inout) p )
```

49.59.1.49 fgsl_permutation_inverse()

```
integer(fgsl_int) function fgsl_permutation_inverse (
    type(fgsl_permutation), intent(inout) inv,
    type(fgsl_permutation), intent(in) p )
```

49.59.1.50 fgsl_permutation_inversions()

```
integer(fgsl_size_t) function fgsl_permutation_inversions (
    type(fgsl_permutation), intent(in) p )
```

49.59.1.51 fgsl_permutation_linear_cycles()

```
integer(fgsl_size_t) function fgsl_permutation_linear_cycles (  
    type(fgsl_permutation), intent(in) p )
```

49.59.1.52 fgsl_permutation_linear_to_canonical()

```
integer(fgsl_int) function fgsl_permutation_linear_to_canonical (  
    type(fgsl_permutation), intent(inout) q,  
    type(fgsl_permutation), intent(in) p )
```

49.59.1.53 fgsl_permutation_memcpy()

```
integer(fgsl_int) function fgsl_permutation_memcpy (  
    type(fgsl_permutation), intent(inout) dest,  
    type(fgsl_permutation), intent(in) src )
```

49.59.1.54 fgsl_permutation_mul()

```
integer(fgsl_int) function fgsl_permutation_mul (  
    type(fgsl_permutation), intent(inout) p,  
    type(fgsl_permutation), intent(in) pa,  
    type(fgsl_permutation), intent(in) pb )
```

49.59.1.55 fgsl_permutation_next()

```
integer(fgsl_int) function fgsl_permutation_next (  
    type(fgsl_permutation), intent(in) p )
```

49.59.1.56 fgsl_permutation_prev()

```
integer(fgsl_int) function fgsl_permutation_prev (  
    type(fgsl_permutation), intent(in) p )
```

49.59.1.57 fgsl_permutation_reverse()

```
subroutine fgsl_permutation_reverse (
    type(fgsl_permutation), intent(inout) p )
```

49.59.1.58 fgsl_permutation_size()

```
integer(fgsl_size_t) function fgsl_permutation_size (
    type(fgsl_permutation), intent(in) p )
```

49.59.1.59 fgsl_permutation_status()

```
logical function fgsl_permutation_status (
    type(fgsl_permutation), intent(in) permutation )
```

49.59.1.60 fgsl_permutation_swap()

```
integer(fgsl_int) function fgsl_permutation_swap (
    type(fgsl_permutation), intent(inout) p,
    integer(fgsl_size_t), intent(in) i,
    integer(fgsl_size_t), intent(in) j )
```

49.59.1.61 fgsl_permutation_valid()

```
integer(fgsl_int) function fgsl_permutation_valid (
    type(fgsl_permutation), intent(in) p )
```

49.59.1.62 fgsl_permute()

```
integer(fgsl_int) function fgsl_permute (
    integer(fgsl_size_t), dimension(:), intent(in), target, contiguous p,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.59.1.63 fgsl_permute_inverse()

```
integer(fgsl_int) function fgsl_permute_inverse (  
    integer(fgsl_size_t), dimension(:), intent(in), target, contiguous p,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.59.1.64 fgsl_permute_long()

```
integer(fgsl_int) function fgsl_permute_long (  
    integer(fgsl_size_t), dimension(:), intent(in), target, contiguous p,  
    integer(fgsl_long), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.59.1.65 fgsl_permute_long_inverse()

```
integer(fgsl_int) function fgsl_permute_long_inverse (  
    integer(fgsl_size_t), dimension(:), intent(in), target, contiguous p,  
    integer(fgsl_long), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.59.1.66 fgsl_permute_matrix()

```
integer(fgsl_int) function fgsl_permute_matrix (  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_matrix), intent(inout) a )
```

49.59.1.67 fgsl_permute_vector()

```
integer(fgsl_int) function fgsl_permute_vector (  
    type(fgsl_permutation), intent(in) p,  
    type(fgsl_vector), intent(inout) v )
```


49.59.1.68 fgsl_permute_vector_inverse()

```
integer(fgsl_int) function fgsl_permute_vector_inverse (
    type(fgsl_permutation), intent(in) p,
    type(fgsl_vector), intent(inout) v )
```

49.59.1.69 fgsl_sizeof_combination()

```
integer(fgsl_size_t) function fgsl_sizeof_combination (
    type(fgsl_combination), intent(in) c )
```

49.59.1.70 fgsl_sizeof_multiset()

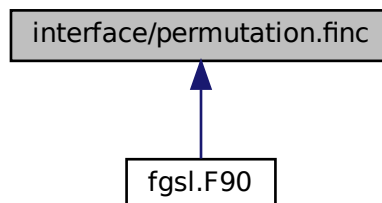
```
integer(fgsl_size_t) function fgsl_sizeof_multiset (
    type(fgsl_multiset), intent(in) c )
```

49.59.1.71 fgsl_sizeof_permutation()

```
integer(fgsl_size_t) function fgsl_sizeof_permutation (
    type(fgsl_permutation), intent(in) p )
```

49.60 interface/permutation.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_permutation_alloc](#) (n)
- type(c_ptr) function [gsl_permutation_calloc](#) (n)
- subroutine [gsl_permutation_init](#) (p)
- subroutine [gsl_permutation_free](#) (p)
- integer(c_int) function [gsl_permutation_memcpy](#) (dest, src)
- integer(c_size_t) function [gsl_permutation_get](#) (p, i)
- integer(c_int) function [gsl_permutation_swap](#) (p, i, j)
- integer(c_size_t) function [gsl_permutation_size](#) (p)
- type(c_ptr) function [gsl_permutation_data](#) (p)
- integer(c_int) function [gsl_permutation_valid](#) (p)
- subroutine [gsl_permutation_reverse](#) (p)
- integer(c_int) function [gsl_permutation_inverse](#) (inv, p)
- integer(c_int) function [gsl_permutation_next](#) (p)
- integer(c_int) function [gsl_permutation_prev](#) (p)
- integer(c_int) function [gsl_permute](#) (p, data, stride, n)
- integer(c_int) function [gsl_permute_long](#) (p, data, stride, n)
- integer(c_int) function [gsl_permute_inverse](#) (p, data, stride, n)
- integer(c_int) function [gsl_permute_long_inverse](#) (p, data, stride, n)
- integer(c_int) function [gsl_permute_vector](#) (p, v)
- integer(c_int) function [gsl_permute_vector_inverse](#) (p, v)
- integer(c_int) function [gsl_permute_matrix](#) (p, v)
- integer(c_int) function [gsl_permutation_mul](#) (p, pa, pb)
- integer(c_int) function [gsl_permutation_fwrite](#) (stream, p)
- integer(c_int) function [gsl_permutation_fread](#) (stream, p)
- integer(c_int) function [gsl_permutation_fprintf](#) (stream, p, format)
- integer(c_int) function [gsl_permutation_fscanf](#) (stream, p)
- integer(c_int) function [gsl_permutation_linear_to_canonical](#) (q, p)
- integer(c_int) function [gsl_permutation_canonical_to_linear](#) (p, q)
- integer(c_size_t) function [gsl_permutation_inversions](#) (p)
- integer(c_size_t) function [gsl_permutation_linear_cycles](#) (p)
- integer(c_size_t) function [gsl_permutation_canonical_cycles](#) (p)
- type(c_ptr) function [gsl_combination_alloc](#) (n, k)
- type(c_ptr) function [gsl_combination_calloc](#) (n, k)
- subroutine [gsl_combination_init_first](#) (c)
- subroutine [gsl_combination_init_last](#) (c)
- subroutine [gsl_combination_free](#) (c)
- integer(c_int) function [gsl_combination_memcpy](#) (dest, src)
- integer(c_size_t) function [gsl_combination_get](#) (c, i)
- integer(c_size_t) function [gsl_combination_n](#) (c)
- integer(c_size_t) function [gsl_combination_k](#) (c)
- type(c_ptr) function [gsl_combination_data](#) (c)
- integer(c_int) function [gsl_combination_valid](#) (c)
- integer(c_int) function [gsl_combination_next](#) (c)
- integer(c_int) function [gsl_combination_prev](#) (c)
- integer(c_int) function [gsl_combination_fwrite](#) (stream, c)
- integer(c_int) function [gsl_combination_fread](#) (stream, c)
- integer(c_int) function [gsl_combination_fprintf](#) (stream, c, format)
- integer(c_int) function [gsl_combination_fscanf](#) (stream, c)
- type(c_ptr) function [gsl_multiset_alloc](#) (n, k)
- type(c_ptr) function [gsl_multiset_calloc](#) (n, k)
- subroutine [gsl_multiset_init_first](#) (c)
- subroutine [gsl_multiset_init_last](#) (c)
- subroutine [gsl_multiset_free](#) (c)

- integer(c_int) function [gsl_multiset_memcpy](#) (dest, src)
- integer(c_size_t) function [gsl_multiset_get](#) (c, i)
- integer(c_size_t) function [gsl_multiset_n](#) (c)
- integer(c_size_t) function [gsl_multiset_k](#) (c)
- type(c_ptr) function [gsl_multiset_data](#) (c)
- integer(c_int) function [gsl_multiset_valid](#) (c)
- integer(c_int) function [gsl_multiset_next](#) (c)
- integer(c_int) function [gsl_multiset_prev](#) (c)
- integer(c_int) function [gsl_multiset_fwrite](#) (stream, c)
- integer(c_int) function [gsl_multiset_fread](#) (stream, c)
- integer(c_int) function [gsl_multiset_fprintf](#) (stream, c, format)
- integer(c_int) function [gsl_multiset_fscanf](#) (stream, c)
- integer(c_size_t) function [gsl_aux_sizeof_permutation](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_combination](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_multiset](#) ()

49.60.1 Function/Subroutine Documentation

49.60.1.1 [gsl_aux_sizeof_combination\(\)](#)

integer(c_size_t) function [gsl_aux_sizeof_combination](#)

49.60.1.2 [gsl_aux_sizeof_multiset\(\)](#)

integer(c_size_t) function [gsl_aux_sizeof_multiset](#)

49.60.1.3 [gsl_aux_sizeof_permutation\(\)](#)

integer(c_size_t) function [gsl_aux_sizeof_permutation](#)

49.60.1.4 [gsl_combination_alloc\(\)](#)

```
type(c_ptr) function gsl\_combination\_alloc (  
    integer(c_size_t), value n,  
    integer(c_size_t), value k )
```

49.60.1.5 `gsl_combination_calloc()`

```
type(c_ptr) function gsl_combination_calloc (
    integer(c_size_t), value n,
    integer(c_size_t), value k )
```

49.60.1.6 `gsl_combination_data()`

```
type(c_ptr) function gsl_combination_data (
    type(c_ptr), value c )
```

49.60.1.7 `gsl_combination_fprintf()`

```
integer(c_int) function gsl_combination_fprintf (
    type(c_ptr), value stream,
    type(c_ptr), value c,
    character(kind=c_char) format )
```

49.60.1.8 `gsl_combination_fread()`

```
integer(c_int) function gsl_combination_fread (
    type(c_ptr), value stream,
    type(c_ptr), value c )
```

49.60.1.9 `gsl_combination_free()`

```
subroutine gsl_combination_free (
    type(c_ptr), value c )
```

49.60.1.10 `gsl_combination_fscanf()`

```
integer(c_int) function gsl_combination_fscanf (
    type(c_ptr), value stream,
    type(c_ptr), value c )
```

49.60.1.11 gsl_combination_fwrite()

```
integer(c_int) function gsl_combination_fwrite (  
    type(c_ptr), value stream,  
    type(c_ptr), value c )
```

49.60.1.12 gsl_combination_get()

```
integer(c_size_t) function gsl_combination_get (  
    type(c_ptr), value c,  
    integer(c_size_t), value i )
```

49.60.1.13 gsl_combination_init_first()

```
subroutine gsl_combination_init_first (  
    type(c_ptr), value c )
```

49.60.1.14 gsl_combination_init_last()

```
subroutine gsl_combination_init_last (  
    type(c_ptr), value c )
```

49.60.1.15 gsl_combination_k()

```
integer(c_size_t) function gsl_combination_k (  
    type(c_ptr), value c )
```

49.60.1.16 gsl_combination_memcpy()

```
integer(c_int) function gsl_combination_memcpy (  
    type(c_ptr), value dest,  
    type(c_ptr), value src )
```

49.60.1.17 gsl_combination_n()

```
integer(c_size_t) function gsl_combination_n (  
    type(c_ptr), value c )
```

49.60.1.18 gsl_combination_next()

```
integer(c_int) function gsl_combination_next (  
    type(c_ptr), value c )
```

49.60.1.19 gsl_combination_prev()

```
integer(c_int) function gsl_combination_prev (  
    type(c_ptr), value c )
```

49.60.1.20 gsl_combination_valid()

```
integer(c_int) function gsl_combination_valid (  
    type(c_ptr), value c )
```

49.60.1.21 gsl_multiset_alloc()

```
type(c_ptr) function gsl_multiset_alloc (  
    integer(c_size_t), value n,  
    integer(c_size_t), value k )
```

49.60.1.22 gsl_multiset_calloc()

```
type(c_ptr) function gsl_multiset_calloc (  
    integer(c_size_t), value n,  
    integer(c_size_t), value k )
```

49.60.1.23 gsl_multiset_data()

```
type(c_ptr) function gsl_multiset_data (  
    type(c_ptr), value c )
```

49.60.1.24 gsl_multiset_fprintf()

```
integer(c_int) function gsl_multiset_fprintf (
    type(c_ptr), value stream,
    type(c_ptr), value c,
    character(kind=c_char) format )
```

49.60.1.25 gsl_multiset_fread()

```
integer(c_int) function gsl_multiset_fread (
    type(c_ptr), value stream,
    type(c_ptr), value c )
```

49.60.1.26 gsl_multiset_free()

```
subroutine gsl_multiset_free (
    type(c_ptr), value c )
```

49.60.1.27 gsl_multiset_fscanf()

```
integer(c_int) function gsl_multiset_fscanf (
    type(c_ptr), value stream,
    type(c_ptr), value c )
```

49.60.1.28 gsl_multiset_fwrite()

```
integer(c_int) function gsl_multiset_fwrite (
    type(c_ptr), value stream,
    type(c_ptr), value c )
```

49.60.1.29 gsl_multiset_get()

```
integer(c_size_t) function gsl_multiset_get (
    type(c_ptr), value c,
    integer(c_size_t), value i )
```

49.60.1.30 gsl_multiset_init_first()

```
subroutine gsl_multiset_init_first (  
    type(c_ptr), value c )
```

49.60.1.31 gsl_multiset_init_last()

```
subroutine gsl_multiset_init_last (  
    type(c_ptr), value c )
```

49.60.1.32 gsl_multiset_k()

```
integer(c_size_t) function gsl_multiset_k (  
    type(c_ptr), value c )
```

49.60.1.33 gsl_multiset_memcpy()

```
integer(c_int) function gsl_multiset_memcpy (  
    type(c_ptr), value dest,  
    type(c_ptr), value src )
```

49.60.1.34 gsl_multiset_n()

```
integer(c_size_t) function gsl_multiset_n (  
    type(c_ptr), value c )
```

49.60.1.35 gsl_multiset_next()

```
integer(c_int) function gsl_multiset_next (  
    type(c_ptr), value c )
```

49.60.1.36 gsl_multiset_prev()

```
integer(c_int) function gsl_multiset_prev (  
    type(c_ptr), value c )
```


49.60.1.37 gsl_multiset_valid()

```
integer(c_int) function gsl_multiset_valid (  
    type(c_ptr), value c )
```

49.60.1.38 gsl_permutation_alloc()

```
type(c_ptr) function gsl_permutation_alloc (  
    integer(c_size_t), value n )
```

49.60.1.39 gsl_permutation_calloc()

```
type(c_ptr) function gsl_permutation_calloc (  
    integer(c_size_t), value n )
```

49.60.1.40 gsl_permutation_canonical_cycles()

```
integer(c_size_t) function gsl_permutation_canonical_cycles (  
    type(c_ptr), value p )
```

49.60.1.41 gsl_permutation_canonical_to_linear()

```
integer(c_int) function gsl_permutation_canonical_to_linear (  
    type(c_ptr), value p,  
    type(c_ptr), value q )
```

49.60.1.42 gsl_permutation_data()

```
type(c_ptr) function gsl_permutation_data (  
    type(c_ptr), value p )
```

49.60.1.43 gsl_permutation_fprintf()

```
integer(c_int) function gsl_permutation_fprintf (  
    type(c_ptr), value stream,  
    type(c_ptr), value p,  
    character(kind=c_char) format )
```

49.60.1.44 gsl_permutation_fread()

```
integer(c_int) function gsl_permutation_fread (  
    type(c_ptr), value stream,  
    type(c_ptr), value p )
```

49.60.1.45 gsl_permutation_free()

```
subroutine gsl_permutation_free (  
    type(c_ptr), value p )
```

49.60.1.46 gsl_permutation_fscanf()

```
integer(c_int) function gsl_permutation_fscanf (  
    type(c_ptr), value stream,  
    type(c_ptr), value p )
```

49.60.1.47 gsl_permutation_fwrite()

```
integer(c_int) function gsl_permutation_fwrite (  
    type(c_ptr), value stream,  
    type(c_ptr), value p )
```

49.60.1.48 gsl_permutation_get()

```
integer(c_size_t) function gsl_permutation_get (  
    type(c_ptr), value p,  
    integer(c_size_t), value i )
```

49.60.1.49 gsl_permutation_init()

```
subroutine gsl_permutation_init (  
    type(c_ptr), value p )
```

49.60.1.50 gsl_permutation_inverse()

```
integer(c_int) function gsl_permutation_inverse (  
    type(c_ptr), value inv,  
    type(c_ptr), value p )
```

49.60.1.51 gsl_permutation_inversions()

```
integer(c_size_t) function gsl_permutation_inversions (  
    type(c_ptr), value p )
```

49.60.1.52 gsl_permutation_linear_cycles()

```
integer(c_size_t) function gsl_permutation_linear_cycles (  
    type(c_ptr), value p )
```

49.60.1.53 gsl_permutation_linear_to_canonical()

```
integer(c_int) function gsl_permutation_linear_to_canonical (  
    type(c_ptr), value q,  
    type(c_ptr), value p )
```

49.60.1.54 gsl_permutation_memcpy()

```
integer(c_int) function gsl_permutation_memcpy (  
    type(c_ptr), value dest,  
    type(c_ptr), value src )
```

49.60.1.55 gsl_permutation_mul()

```
integer(c_int) function gsl_permutation_mul (  
    type(c_ptr), value p,  
    type(c_ptr), value pa,  
    type(c_ptr), value pb )
```

49.60.1.56 gsl_permutation_next()

```
integer(c_int) function gsl_permutation_next (
    type(c_ptr), value p )
```

49.60.1.57 gsl_permutation_prev()

```
integer(c_int) function gsl_permutation_prev (
    type(c_ptr), value p )
```

49.60.1.58 gsl_permutation_reverse()

```
subroutine gsl_permutation_reverse (
    type(c_ptr), value p )
```

49.60.1.59 gsl_permutation_size()

```
integer(c_size_t) function gsl_permutation_size (
    type(c_ptr), value p )
```

49.60.1.60 gsl_permutation_swap()

```
integer(c_int) function gsl_permutation_swap (
    type(c_ptr), value p,
    integer(c_size_t), value i,
    integer(c_size_t), value j )
```

49.60.1.61 gsl_permutation_valid()

```
integer(c_int) function gsl_permutation_valid (
    type(c_ptr), value p )
```

49.60.1.62 gsl_permute()

```
integer(c_int) function gsl_permute (  
    type(c_ptr), value p,  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.60.1.63 gsl_permute_inverse()

```
integer(c_int) function gsl_permute_inverse (  
    type(c_ptr), value p,  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.60.1.64 gsl_permute_long()

```
integer(c_int) function gsl_permute_long (  
    type(c_ptr), value p,  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.60.1.65 gsl_permute_long_inverse()

```
integer(c_int) function gsl_permute_long_inverse (  
    type(c_ptr), value p,  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.60.1.66 gsl_permute_matrix()

```
integer(c_int) function gsl_permute_matrix (  
    type(c_ptr), value p,  
    type(c_ptr), value v )
```

49.60.1.67 gsl_permute_vector()

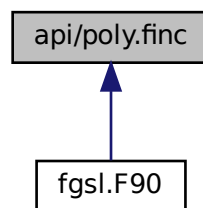
```
integer(c_int) function gsl_permute_vector (
    type(c_ptr), value p,
    type(c_ptr), value v )
```

49.60.1.68 gsl_permute_vector_inverse()

```
integer(c_int) function gsl_permute_vector_inverse (
    type(c_ptr), value p,
    type(c_ptr), value v )
```

49.61 api/poly.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- real(fgsl_double) function [fgsl_poly_eval](#) (c, x)
- complex(fgsl_double_complex) function [fgsl_poly_complex_eval](#) (c, z)
- complex(fgsl_double_complex) function [fgsl_complex_poly_complex_eval](#) (c, z)
- integer(fgsl_int) function [fgsl_poly_eval_derivs](#) (c, x, res)
- integer(fgsl_int) function [fgsl_poly_dd_init](#) (dd, x, y)
- real(fgsl_double) function [fgsl_poly_dd_eval](#) (dd, xa, x)
- integer(fgsl_int) function [fgsl_poly_dd_taylor](#) (c, xp, dd, x, w)
- integer(fgsl_int) function [fgsl_poly_dd_hermite_init](#) (dd, z, xa, ya, dya)
- integer(fgsl_int) function [fgsl_poly_solve_quadratic](#) (a, b, c, x0, x1)
- integer(fgsl_int) function [fgsl_poly_complex_solve_quadratic](#) (a, b, c, x0, x1)
- integer(fgsl_int) function [fgsl_poly_solve_cubic](#) (a, b, c, x0, x1, x2)
- integer(fgsl_int) function [fgsl_poly_complex_solve_cubic](#) (a, b, c, x0, x1, x2)
- type(fgsl_poly_complex_workspace) function [fgsl_poly_complex_workspace_alloc](#) (n)
- subroutine [fgsl_poly_complex_workspace_free](#) (w)
- logical function [fgsl_poly_complex_workspace_stat](#) (w)
- integer(fgsl_int) function [fgsl_poly_complex_solve](#) (a, n, w, z)

49.61.1 Function/Subroutine Documentation

49.61.1.1 fgsl_complex_poly_complex_eval()

```
complex(fgsl_double_complex) function fgsl_complex_poly_complex_eval (  
    complex(fgsl_double_complex), dimension(:), intent(in) c,  
    complex(fgsl_double_complex), intent(in) z )
```

49.61.1.2 fgsl_poly_complex_eval()

```
complex(fgsl_double_complex) function fgsl_poly_complex_eval (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous c,  
    complex(fgsl_double_complex), intent(in) z )
```

49.61.1.3 fgsl_poly_complex_solve()

```
integer(fgsl_int) function fgsl_poly_complex_solve (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous a,  
    integer(fgsl_size_t), intent(in) n,  
    type(fgsl_poly_complex_workspace), intent(inout) w,  
    complex(fgsl_double_complex), dimension(:), intent(out) z )
```

49.61.1.4 fgsl_poly_complex_solve_cubic()

```
integer(fgsl_int) function fgsl_poly_complex_solve_cubic (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) c,  
    complex(fgsl_double_complex), intent(out) x0,  
    complex(fgsl_double_complex), intent(out) x1,  
    complex(fgsl_double_complex), intent(out) x2 )
```

49.61.1.5 fgsl_poly_complex_solve_quadratic()

```
integer(fgsl_int) function fgsl_poly_complex_solve_quadratic (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) c,  
    complex(fgsl_double_complex), intent(out) x0,  
    complex(fgsl_double_complex), intent(out) x1 )
```

49.61.1.6 fgsl_poly_complex_workspace_alloc()

```
type(fgsl_poly_complex_workspace) function fgsl_poly_complex_workspace_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.61.1.7 fgsl_poly_complex_workspace_free()

```
subroutine fgsl_poly_complex_workspace_free (
    type(fgsl_poly_complex_workspace), intent(inout) w )
```

49.61.1.8 fgsl_poly_complex_workspace_stat()

```
logical function fgsl_poly_complex_workspace_stat (
    type(fgsl_poly_complex_workspace), intent(in) w )
```

49.61.1.9 fgsl_poly_dd_eval()

```
real(fgsl_double) function fgsl_poly_dd_eval (
    real(fgsl_double), dimension(:), intent(in), target, contiguous dd,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,
    real(fgsl_double), intent(in) x )
```

49.61.1.10 fgsl_poly_dd_hermite_init()

```
integer(fgsl_int) function fgsl_poly_dd_hermite_init (
    real(fgsl_double), dimension(:), intent(inout), target, contiguous dd,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous z,
    real(fgsl_double), dimension(:), intent(in), target, contiguous xa,
    real(fgsl_double), dimension(:), intent(in), target, contiguous ya,
    real(fgsl_double), dimension(:), intent(in), target, contiguous dya )
```

49.61.1.11 fgsl_poly_dd_init()

```
integer(fgsl_int) function fgsl_poly_dd_init (
    real(fgsl_double), dimension(:), intent(inout), target, contiguous dd,
    real(fgsl_double), dimension(:), intent(in), target, contiguous x,
    real(fgsl_double), dimension(:), intent(in), target, contiguous y )
```


49.61.1.12 fgsl_poly_dd_taylor()

```
integer(fgsl_int) function fgsl_poly_dd_taylor (
    real(fgsl_double), dimension(:), intent(inout), target, contiguous c,
    real(fgsl_double), intent(in) xp,
    real(fgsl_double), dimension(:), intent(in), target, contiguous dd,
    real(fgsl_double), dimension(:), intent(in), target, contiguous x,
    real(fgsl_double), dimension(:), intent(out), target, contiguous w )
```

49.61.1.13 fgsl_poly_eval()

```
real(fgsl_double) function fgsl_poly_eval (
    real(fgsl_double), dimension(:), intent(in), target, contiguous c,
    real(fgsl_double), intent(in) x )
```

49.61.1.14 fgsl_poly_eval_derivs()

```
integer(fgsl_int) function fgsl_poly_eval_derivs (
    real(fgsl_double), dimension(:), intent(in), target, contiguous c,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), dimension(:), target, contiguous res )
```

49.61.1.15 fgsl_poly_solve_cubic()

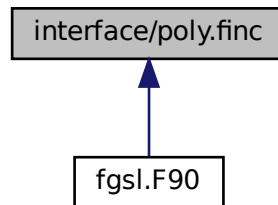
```
integer(fgsl_int) function fgsl_poly_solve_cubic (
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    real(fgsl_double), intent(in) c,
    real(fgsl_double), intent(out) x0,
    real(fgsl_double), intent(out) x1,
    real(fgsl_double), intent(out) x2 )
```

49.61.1.16 fgsl_poly_solve_quadratic()

```
integer(fgsl_int) function fgsl_poly_solve_quadratic (
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b,
    real(fgsl_double), intent(in) c,
    real(fgsl_double), intent(out) x0,
    real(fgsl_double), intent(out) x1 )
```

49.62 interface/poly.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- real(c_double) function [gsl_poly_eval](#) (c, len, x)
- type(gsl_complex) function [gsl_poly_complex_eval](#) (c, len, z)
- type(gsl_complex) function [gsl_complex_poly_complex_eval](#) (c, len, z)
- integer(c_int) function [gsl_poly_eval_derivs](#) (c, lenc, x, res, lenres)
- integer(c_int) function [gsl_poly_dd_init](#) (dd, x, y, size)
- real(c_double) function [gsl_poly_dd_eval](#) (dd, xa, size, x)
- integer(c_int) function [gsl_poly_dd_taylor](#) (c, xp, dd, x, size, w)
- integer(c_int) function [gsl_poly_dd_hermite_init](#) (dd, z, xa, ya, dya, size)
- integer(c_int) function [gsl_poly_solve_quadratic](#) (a, b, c, x0, x1)
- integer(c_int) function [gsl_poly_complex_solve_quadratic](#) (a, b, c, x0, x1)
- integer(c_int) function [gsl_poly_solve_cubic](#) (a, b, c, x0, x1, x2)
- integer(c_int) function [gsl_poly_complex_solve_cubic](#) (a, b, c, x0, x1, x2)
- type(c_ptr) function [gsl_poly_complex_workspace_alloc](#) (n)
- subroutine [gsl_poly_complex_workspace_free](#) (w)
- integer(c_int) function [gsl_poly_complex_solve](#) (a, n, w, z)

49.62.1 Function/Subroutine Documentation

49.62.1.1 [gsl_complex_poly_complex_eval\(\)](#)

```

type(gsl_complex) function gsl_complex_poly_complex_eval (
    type(c_ptr), value c,
    integer(c_int), value len,
    type(gsl_complex), value z )
  
```

49.62.1.2 `gsl_poly_complex_eval()`

```
type(gsl_complex) function gsl_poly_complex_eval (
    type(c_ptr), value c,
    integer(c_int), value len,
    type(gsl_complex), value z )
```

49.62.1.3 `gsl_poly_complex_solve()`

```
integer(c_int) function gsl_poly_complex_solve (
    type(c_ptr), value a,
    integer(c_size_t), value n,
    type(c_ptr), value w,
    type(c_ptr), value z )
```

49.62.1.4 `gsl_poly_complex_solve_cubic()`

```
integer(c_int) function gsl_poly_complex_solve_cubic (
    real(c_double), value a,
    real(c_double), value b,
    real(c_double), value c,
    type(gsl_complex) x0,
    type(gsl_complex) x1,
    type(gsl_complex) x2 )
```

49.62.1.5 `gsl_poly_complex_solve_quadratic()`

```
integer(c_int) function gsl_poly_complex_solve_quadratic (
    real(c_double), value a,
    real(c_double), value b,
    real(c_double), value c,
    type(gsl_complex) x0,
    type(gsl_complex) x1 )
```

49.62.1.6 `gsl_poly_complex_workspace_alloc()`

```
type(c_ptr) function gsl_poly_complex_workspace_alloc (
    integer(c_size_t), value n )
```

49.62.1.7 `gsl_poly_complex_workspace_free()`

```
subroutine gsl_poly_complex_workspace_free (  
    type(c_ptr), value w )
```

49.62.1.8 `gsl_poly_dd_eval()`

```
real(c_double) function gsl_poly_dd_eval (  
    type(c_ptr), value dd,  
    type(c_ptr), value xa,  
    integer(c_size_t), value size,  
    real(c_double), value x )
```

49.62.1.9 `gsl_poly_dd_hermite_init()`

```
integer(c_int) function gsl_poly_dd_hermite_init (  
    type(c_ptr), value dd,  
    type(c_ptr), value z,  
    type(c_ptr), value xa,  
    type(c_ptr), value ya,  
    type(c_ptr), value dya,  
    integer(c_size_t), value size )
```

49.62.1.10 `gsl_poly_dd_init()`

```
integer(c_int) function gsl_poly_dd_init (  
    type(c_ptr), value dd,  
    type(c_ptr), value x,  
    type(c_ptr), value y,  
    integer(c_size_t), value size )
```

49.62.1.11 `gsl_poly_dd_taylor()`

```
integer(c_int) function gsl_poly_dd_taylor (  
    type(c_ptr), value c,  
    real(c_double), value xp,  
    type(c_ptr), value dd,  
    type(c_ptr), value x,  
    integer(c_size_t), value size,  
    type(c_ptr), value w )
```

49.62.1.12 gsl_poly_eval()

```
real(c_double) function gsl_poly_eval (
    type(c_ptr), value c,
    integer(c_int), value len,
    real(c_double), value x )
```

49.62.1.13 gsl_poly_eval_derivs()

```
integer(c_int) function gsl_poly_eval_derivs (
    type(c_ptr), value c,
    integer(c_size_t), value len,
    real(c_double), value x,
    type(c_ptr), value res,
    integer(c_size_t), value lenres )
```

49.62.1.14 gsl_poly_solve_cubic()

```
integer(c_int) function gsl_poly_solve_cubic (
    real(c_double), value a,
    real(c_double), value b,
    real(c_double), value c,
    real(c_double) x0,
    real(c_double) x1,
    real(c_double) x2 )
```

49.62.1.15 gsl_poly_solve_quadratic()

```
integer(c_int) function gsl_poly_solve_quadratic (
    real(c_double), value a,
    real(c_double), value b,
    real(c_double), value c,
    real(c_double) x0,
    real(c_double) x1 )
```

49.63 api/rng.finc File Reference**Functions/Subroutines**

- type(fgsl_rng) function [fgsl_rng_alloc](#) (t)
- subroutine [fgsl_rng_set](#) (r, s)
- subroutine [fgsl_rng_free](#) (r)
- integer(fgsl_long) function [fgsl_rng_get](#) (r)
- real(fgsl_double) function [fgsl_rng_uniform](#) (r)

- `real(fgsl_double)` function [fgsl_rng_uniform_pos](#) (r)
- `integer(fgsl_long)` function [fgsl_rng_uniform_int](#) (r, n)
- `character(kind=fgsl_char, len=fgsl_strmax)` function [fgsl_rng_name](#) (r)
- `integer(fgsl_long)` function [fgsl_rng_max](#) (r)
- `integer(fgsl_long)` function [fgsl_rng_min](#) (r)
- `type(fgsl_rng_type)` function [fgsl_rng_env_setup](#) ()
- `integer(fgsl_int)` function [fgsl_rng_memcpy](#) (cpy, src)
- `type(fgsl_rng)` function [fgsl_rng_clone](#) (r)
- `integer(fgsl_int)` function [fgsl_rng_fwrite](#) (stream, r)
- `integer(fgsl_int)` function [fgsl_rng_fread](#) (stream, r)
- `type(fgsl_qrng)` function [fgsl_qrng_alloc](#) (t, d)
- subroutine [fgsl_qrng_free](#) (r)
- subroutine [fgsl_qrng_init](#) (r)
- `integer(fgsl_int)` function [fgsl_qrng_get](#) (q, x)
- `character(kind=fgsl_char, len=fgsl_strmax)` function [fgsl_qrng_name](#) (q)
- `integer(fgsl_int)` function [fgsl_qrng_memcpy](#) (cpy, src)
- `type(fgsl_qrng)` function [fgsl_qrng_clone](#) (q)
- `real(fgsl_double)` function [fgsl_ran_gaussian](#) (r, sigma)
- `real(fgsl_double)` function [fgsl_ran_gaussian_pdf](#) (x, sigma)
- `real(fgsl_double)` function [fgsl_ran_gaussian_ziggurat](#) (r, sigma)
- `real(fgsl_double)` function [fgsl_ran_gaussian_ratio_method](#) (r, sigma)
- `real(fgsl_double)` function [fgsl_ran_ugaussian](#) (r)
- `real(fgsl_double)` function [fgsl_ran_ugaussian_pdf](#) (x)
- `real(fgsl_double)` function [fgsl_ran_ugaussian_ratio_method](#) (r)
- `real(fgsl_double)` function [fgsl_cdf_gaussian_p](#) (x, sigma)
- `real(fgsl_double)` function [fgsl_cdf_gaussian_q](#) (x, sigma)
- `real(fgsl_double)` function [fgsl_cdf_gaussian_pinv](#) (p, sigma)
- `real(fgsl_double)` function [fgsl_cdf_gaussian_qinv](#) (q, sigma)
- `real(fgsl_double)` function [fgsl_cdf_ugaussian_p](#) (x)
- `real(fgsl_double)` function [fgsl_cdf_ugaussian_q](#) (x)
- `real(fgsl_double)` function [fgsl_cdf_ugaussian_pinv](#) (p)
- `real(fgsl_double)` function [fgsl_cdf_ugaussian_qinv](#) (q)
- `real(fgsl_double)` function [fgsl_ran_gaussian_tail](#) (r, a, sigma)
- `real(fgsl_double)` function [fgsl_ran_gaussian_tail_pdf](#) (x, a, sigma)
- `real(fgsl_double)` function [fgsl_ran_ugaussian_tail](#) (r, a)
- `real(fgsl_double)` function [fgsl_ran_ugaussian_tail_pdf](#) (x, a)
- subroutine [fgsl_ran_bivariate_gaussian](#) (r, sigma_x, sigma_y, rho, x, y)
- `real(fgsl_double)` function [fgsl_ran_bivariate_gaussian_pdf](#) (x, y, sigma_x, sigma_y, rho)
- `integer(fgsl_int)` function [fgsl_ran_multivariate_gaussian](#) (r, mu, l, result)
- `integer(fgsl_int)` function [fgsl_ran_multivariate_gaussian_pdf](#) (x, mu, l, result, work)
- `integer(fgsl_int)` function [fgsl_ran_multivariate_gaussian_log_pdf](#) (x, mu, l, result, work)
- `integer(fgsl_int)` function [fgsl_ran_multivariate_gaussian_mean](#) (x, mu_hat)
- `integer(fgsl_int)` function [fgsl_ran_multivariate_gaussian_vcov](#) (x, sigma_hat)
- `real(fgsl_double)` function [fgsl_ran_exponential](#) (r, mu)
- `real(fgsl_double)` function [fgsl_ran_exponential_pdf](#) (x, mu)
- `real(fgsl_double)` function [fgsl_cdf_exponential_p](#) (x, mu)
- `real(fgsl_double)` function [fgsl_cdf_exponential_q](#) (x, mu)
- `real(fgsl_double)` function [fgsl_cdf_exponential_pinv](#) (p, mu)
- `real(fgsl_double)` function [fgsl_cdf_exponential_qinv](#) (q, mu)
- `real(fgsl_double)` function [fgsl_ran_laplace](#) (r, a)
- `real(fgsl_double)` function [fgsl_ran_laplace_pdf](#) (x, a)
- `real(fgsl_double)` function [fgsl_cdf_laplace_p](#) (x, a)
- `real(fgsl_double)` function [fgsl_cdf_laplace_q](#) (x, a)
- `real(fgsl_double)` function [fgsl_cdf_laplace_pinv](#) (p, a)
- `real(fgsl_double)` function [fgsl_cdf_laplace_qinv](#) (q, a)

- real(fgsl_double) function [fgsl_ran_exppow](#) (r, a, b)
- real(fgsl_double) function [fgsl_ran_exppow_pdf](#) (x, a, b)
- real(fgsl_double) function [fgsl_cdf_exppow_p](#) (x, a, b)
- real(fgsl_double) function [fgsl_cdf_exppow_q](#) (x, a, b)
- real(fgsl_double) function [fgsl_ran_cauchy](#) (r, a)
- real(fgsl_double) function [fgsl_ran_cauchy_pdf](#) (x, a)
- real(fgsl_double) function [fgsl_cdf_cauchy_p](#) (x, a)
- real(fgsl_double) function [fgsl_cdf_cauchy_q](#) (x, a)
- real(fgsl_double) function [fgsl_cdf_cauchy_pinv](#) (p, a)
- real(fgsl_double) function [fgsl_cdf_cauchy_qinv](#) (q, a)
- real(fgsl_double) function [fgsl_ran_rayleigh](#) (r, sigma)
- real(fgsl_double) function [fgsl_ran_rayleigh_pdf](#) (x, sigma)
- real(fgsl_double) function [fgsl_cdf_rayleigh_p](#) (x, sigma)
- real(fgsl_double) function [fgsl_cdf_rayleigh_q](#) (x, sigma)
- real(fgsl_double) function [fgsl_cdf_rayleigh_pinv](#) (p, sigma)
- real(fgsl_double) function [fgsl_cdf_rayleigh_qinv](#) (q, sigma)
- real(fgsl_double) function [fgsl_ran_rayleigh_tail](#) (r, a, sigma)
- real(fgsl_double) function [fgsl_ran_rayleigh_tail_pdf](#) (x, a, sigma)
- real(fgsl_double) function [fgsl_ran_landau](#) (r)
- real(fgsl_double) function [fgsl_ran_landau_pdf](#) (x)
- real(fgsl_double) function [fgsl_ran_levy](#) (r, c, alpha)
- real(fgsl_double) function [fgsl_ran_levy_skew](#) (r, c, alpha, beta)
- real(fgsl_double) function [fgsl_ran_gamma](#) (r, a, b)
- real(fgsl_double) function [fgsl_ran_gamma_mt](#) (r, a, b)
- real(fgsl_double) function [fgsl_ran_gamma_pdf](#) (x, a, b)
- real(fgsl_double) function [fgsl_cdf_gamma_p](#) (x, a, b)
- real(fgsl_double) function [fgsl_cdf_gamma_q](#) (x, a, b)
- real(fgsl_double) function [fgsl_cdf_gamma_pinv](#) (p, a, b)
- real(fgsl_double) function [fgsl_cdf_gamma_qinv](#) (q, a, b)
- real(fgsl_double) function [fgsl_ran_flat](#) (r, a, b)
- real(fgsl_double) function [fgsl_ran_flat_pdf](#) (x, a, b)
- real(fgsl_double) function [fgsl_cdf_flat_p](#) (x, a, b)
- real(fgsl_double) function [fgsl_cdf_flat_q](#) (x, a, b)
- real(fgsl_double) function [fgsl_cdf_flat_pinv](#) (p, a, b)
- real(fgsl_double) function [fgsl_cdf_flat_qinv](#) (q, a, b)
- real(fgsl_double) function [fgsl_ran_lognormal](#) (r, zeta, sigma)
- real(fgsl_double) function [fgsl_ran_lognormal_pdf](#) (x, zeta, sigma)
- real(fgsl_double) function [fgsl_cdf_lognormal_p](#) (x, zeta, sigma)
- real(fgsl_double) function [fgsl_cdf_lognormal_q](#) (x, zeta, sigma)
- real(fgsl_double) function [fgsl_cdf_lognormal_pinv](#) (p, zeta, sigma)
- real(fgsl_double) function [fgsl_cdf_lognormal_qinv](#) (q, zeta, sigma)
- real(fgsl_double) function [fgsl_ran_chisq](#) (r, nu)
- real(fgsl_double) function [fgsl_ran_chisq_pdf](#) (x, nu)
- real(fgsl_double) function [fgsl_cdf_chisq_p](#) (x, nu)
- real(fgsl_double) function [fgsl_cdf_chisq_q](#) (x, nu)
- real(fgsl_double) function [fgsl_cdf_chisq_pinv](#) (p, nu)
- real(fgsl_double) function [fgsl_cdf_chisq_qinv](#) (q, nu)
- real(fgsl_double) function [fgsl_ran_fdist](#) (r, nu1, nu2)
- real(fgsl_double) function [fgsl_ran_fdist_pdf](#) (x, nu1, nu2)
- real(fgsl_double) function [fgsl_cdf_fdist_p](#) (x, nu1, nu2)
- real(fgsl_double) function [fgsl_cdf_fdist_q](#) (x, nu1, nu2)
- real(fgsl_double) function [fgsl_cdf_fdist_pinv](#) (p, nu1, nu2)
- real(fgsl_double) function [fgsl_cdf_fdist_qinv](#) (q, nu1, nu2)
- real(fgsl_double) function [fgsl_ran_tdist](#) (r, nu)
- real(fgsl_double) function [fgsl_ran_tdist_pdf](#) (x, nu)

- `real(fgsl_double)` function [fgsl_cdf_tdist_p](#) (x, nu)
- `real(fgsl_double)` function [fgsl_cdf_tdist_q](#) (x, nu)
- `real(fgsl_double)` function [fgsl_cdf_tdist_pinv](#) (p, nu)
- `real(fgsl_double)` function [fgsl_cdf_tdist_qinv](#) (q, nu)
- `real(fgsl_double)` function [fgsl_ran_beta](#) (r, a, b)
- `real(fgsl_double)` function [fgsl_ran_beta_pdf](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_beta_p](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_beta_q](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_beta_pinv](#) (p, a, b)
- `real(fgsl_double)` function [fgsl_cdf_beta_qinv](#) (q, a, b)
- `real(fgsl_double)` function [fgsl_ran_logistic](#) (r, a)
- `real(fgsl_double)` function [fgsl_ran_logistic_pdf](#) (x, a)
- `real(fgsl_double)` function [fgsl_cdf_logistic_p](#) (x, a)
- `real(fgsl_double)` function [fgsl_cdf_logistic_q](#) (x, a)
- `real(fgsl_double)` function [fgsl_cdf_logistic_pinv](#) (p, a)
- `real(fgsl_double)` function [fgsl_cdf_logistic_qinv](#) (q, a)
- `real(fgsl_double)` function [fgsl_ran_pareto](#) (r, a, b)
- `real(fgsl_double)` function [fgsl_ran_pareto_pdf](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_pareto_p](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_pareto_q](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_pareto_pinv](#) (p, a, b)
- `real(fgsl_double)` function [fgsl_cdf_pareto_qinv](#) (q, a, b)
- subroutine [fgsl_ran_dir_2d](#) (r, x, y)
- subroutine [fgsl_ran_dir_2d_trig_method](#) (r, x, y)
- subroutine [fgsl_ran_dir_3d](#) (r, x, y, z)
- subroutine [fgsl_ran_dir_nd](#) (r, n, x)
- `real(fgsl_double)` function [fgsl_ran_weibull](#) (r, a, b)
- `real(fgsl_double)` function [fgsl_ran_weibull_pdf](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_weibull_p](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_weibull_q](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_weibull_pinv](#) (p, a, b)
- `real(fgsl_double)` function [fgsl_cdf_weibull_qinv](#) (q, a, b)
- `real(fgsl_double)` function [fgsl_ran_gumbel1](#) (r, a, b)
- `real(fgsl_double)` function [fgsl_ran_gumbel1_pdf](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_gumbel1_p](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_gumbel1_q](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_gumbel1_pinv](#) (p, a, b)
- `real(fgsl_double)` function [fgsl_cdf_gumbel1_qinv](#) (q, a, b)
- `real(fgsl_double)` function [fgsl_ran_gumbel2](#) (r, a, b)
- `real(fgsl_double)` function [fgsl_ran_gumbel2_pdf](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_gumbel2_p](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_gumbel2_q](#) (x, a, b)
- `real(fgsl_double)` function [fgsl_cdf_gumbel2_pinv](#) (p, a, b)
- `real(fgsl_double)` function [fgsl_cdf_gumbel2_qinv](#) (q, a, b)
- subroutine [fgsl_ran_dirichlet](#) (r, alpha, theta)
- `real(fgsl_double)` function [fgsl_ran_dirichlet_pdf](#) (alpha, theta)
- `real(fgsl_double)` function [fgsl_ran_dirichlet_lnpdf](#) (alpha, theta)
- `type(fgsl_ran_discrete_t)` function [fgsl_ran_discrete_preproc](#) (p)
- `integer(fgsl_size_t)` function [fgsl_ran_discrete](#) (r, g)
- `real(fgsl_double)` function [fgsl_ran_discrete_pdf](#) (k, g)
- subroutine [fgsl_ran_discrete_free](#) (g)
- `integer(fgsl_int)` function [fgsl_ran_poisson](#) (r, mu)
- `real(fgsl_double)` function [fgsl_ran_poisson_pdf](#) (k, mu)
- `real(fgsl_double)` function [fgsl_cdf_poisson_p](#) (k, mu)
- `real(fgsl_double)` function [fgsl_cdf_poisson_q](#) (k, mu)

- integer(fgsl_int) function [fgsl_ran_bernoulli](#) (r, p)
- real(fgsl_double) function [fgsl_ran_bernoulli_pdf](#) (k, p)
- real(fgsl_double) function [fgsl_ran_binomial](#) (r, p, n)
- real(fgsl_double) function [fgsl_ran_binomial_pdf](#) (k, p, n)
- real(fgsl_double) function [fgsl_cdf_binomial_p](#) (k, p, n)
- real(fgsl_double) function [fgsl_cdf_binomial_q](#) (k, p, n)
- subroutine [fgsl_ran_multinomial](#) (r, nn, p, n)
- real(fgsl_double) function [fgsl_ran_multinomial_pdf](#) (p, n)
- real(fgsl_double) function [fgsl_ran_multinomial_lnpdf](#) (p, n)
- integer(fgsl_int) function [fgsl_ran_negative_binomial](#) (r, p, n)
- real(fgsl_double) function [fgsl_ran_negative_binomial_pdf](#) (k, p, n)
- real(fgsl_double) function [fgsl_cdf_negative_binomial_p](#) (k, p, n)
- real(fgsl_double) function [fgsl_cdf_negative_binomial_q](#) (k, p, n)
- integer(fgsl_int) function [fgsl_ran_pascal](#) (r, p, n)
- real(fgsl_double) function [fgsl_ran_pascal_pdf](#) (k, p, n)
- real(fgsl_double) function [fgsl_cdf_pascal_p](#) (k, p, n)
- real(fgsl_double) function [fgsl_cdf_pascal_q](#) (k, p, n)
- integer(fgsl_int) function [fgsl_ran_geometric](#) (r, p)
- real(fgsl_double) function [fgsl_ran_geometric_pdf](#) (k, p)
- real(fgsl_double) function [fgsl_cdf_geometric_p](#) (k, p)
- real(fgsl_double) function [fgsl_cdf_geometric_q](#) (k, p)
- integer(fgsl_int) function [fgsl_ran_hypergeometric](#) (r, n1, n2, t)
- real(fgsl_double) function [fgsl_ran_hypergeometric_pdf](#) (k, n1, n2, t)
- real(fgsl_double) function [fgsl_cdf_hypergeometric_p](#) (k, n1, n2, t)
- real(fgsl_double) function [fgsl_cdf_hypergeometric_q](#) (k, n1, n2, t)
- integer(fgsl_int) function [fgsl_ran_logarithmic](#) (r, p)
- real(fgsl_double) function [fgsl_ran_logarithmic_pdf](#) (k, p)
- integer(fgsl_int) function [fgsl_ran_wishart](#) (r, df, l, result, work)
- integer(fgsl_int) function [fgsl_ran_wishart_pdf](#) (x, l_x, df, l, result, work)
- integer(fgsl_int) function [fgsl_ran_wishart_log_pdf](#) (x, l_x, df, l, result, work)
- subroutine [fgsl_ran_shuffle](#) (r, base, n, size)
- subroutine [fgsl_ran_shuffle_double](#) (r, base, n)
- subroutine [fgsl_ran_shuffle_size_t](#) (r, base, n)
- integer(fgsl_int) function [fgsl_ran_choose](#) (r, dest, k, src, n, size)
- subroutine [fgsl_ran_sample](#) (r, dest, k, src, n, size)
- subroutine [fgsl_rng_c_ptr](#) (res, src)
- logical function [fgsl_rng_status](#) (rng)
- logical function [fgsl_qrng_status](#) (qrng)
- logical function [fgsl_ran_discrete_t_status](#) (ran_discrete_t)

49.63.1 Function/Subroutine Documentation

49.63.1.1 fgsl_cdf_beta_p()

```
real(fgsl_double) function fgsl_cdf_beta_p (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b )
```

49.63.1.2 fgsl_cdf_beta_pinv()

```
real(fgsl_double) function fgsl_cdf_beta_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.3 fgsl_cdf_beta_q()

```
real(fgsl_double) function fgsl_cdf_beta_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.4 fgsl_cdf_beta_qinv()

```
real(fgsl_double) function fgsl_cdf_beta_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.5 fgsl_cdf_binomial_p()

```
real(fgsl_double) function fgsl_cdf_binomial_p (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p,  
    integer(fgsl_int), intent(in) n )
```

49.63.1.6 fgsl_cdf_binomial_q()

```
real(fgsl_double) function fgsl_cdf_binomial_q (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p,  
    integer(fgsl_int), intent(in) n )
```

49.63.1.7 fgsl_cdf_cauchy_p()

```
real(fgsl_double) function fgsl_cdf_cauchy_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a )
```

49.63.1.8 fgsl_cdf_cauchy_pinv()

```
real(fgsl_double) function fgsl_cdf_cauchy_pinv (
    real(fgsl_double), intent(in) p,
    real(fgsl_double), intent(in) a )
```

49.63.1.9 fgsl_cdf_cauchy_q()

```
real(fgsl_double) function fgsl_cdf_cauchy_q (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) a )
```

49.63.1.10 fgsl_cdf_cauchy_qinv()

```
real(fgsl_double) function fgsl_cdf_cauchy_qinv (
    real(fgsl_double), intent(in) q,
    real(fgsl_double), intent(in) a )
```

49.63.1.11 fgsl_cdf_chisq_p()

```
real(fgsl_double) function fgsl_cdf_chisq_p (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) nu )
```

49.63.1.12 fgsl_cdf_chisq_pinv()

```
real(fgsl_double) function fgsl_cdf_chisq_pinv (
    real(fgsl_double), intent(in) p,
    real(fgsl_double), intent(in) nu )
```

49.63.1.13 fgsl_cdf_chisq_q()

```
real(fgsl_double) function fgsl_cdf_chisq_q (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) nu )
```

49.63.1.14 fgsl_cdf_chisq_qinv()

```
real(fgsl_double) function fgsl_cdf_chisq_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) nu )
```

49.63.1.15 fgsl_cdf_exponential_p()

```
real(fgsl_double) function fgsl_cdf_exponential_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) mu )
```

49.63.1.16 fgsl_cdf_exponential_pinv()

```
real(fgsl_double) function fgsl_cdf_exponential_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) mu )
```

49.63.1.17 fgsl_cdf_exponential_q()

```
real(fgsl_double) function fgsl_cdf_exponential_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) mu )
```

49.63.1.18 fgsl_cdf_exponential_qinv()

```
real(fgsl_double) function fgsl_cdf_exponential_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) mu )
```

49.63.1.19 fgsl_cdf_exppow_p()

```
real(fgsl_double) function fgsl_cdf_exppow_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.20 fgsl_cdf_exppow_q()

```
real(fgsl_double) function fgsl_cdf_exppow_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.21 fgsl_cdf_fdist_p()

```
real(fgsl_double) function fgsl_cdf_fdist_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) nu1,  
    real(fgsl_double), intent(in) nu2 )
```

49.63.1.22 fgsl_cdf_fdist_pinv()

```
real(fgsl_double) function fgsl_cdf_fdist_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) nu1,  
    real(fgsl_double), intent(in) nu2 )
```

49.63.1.23 fgsl_cdf_fdist_q()

```
real(fgsl_double) function fgsl_cdf_fdist_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) nu1,  
    real(fgsl_double), intent(in) nu2 )
```

49.63.1.24 fgsl_cdf_fdist_qinv()

```
real(fgsl_double) function fgsl_cdf_fdist_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) nu1,  
    real(fgsl_double), intent(in) nu2 )
```

49.63.1.25 fgsl_cdf_flat_p()

```
real(fgsl_double) function fgsl_cdf_flat_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.26 fgsl_cdf_flat_pinv()

```
real(fgsl_double) function fgsl_cdf_flat_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.27 fgsl_cdf_flat_q()

```
real(fgsl_double) function fgsl_cdf_flat_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.28 fgsl_cdf_flat_qinv()

```
real(fgsl_double) function fgsl_cdf_flat_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.29 fgsl_cdf_gamma_p()

```
real(fgsl_double) function fgsl_cdf_gamma_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.30 fgsl_cdf_gamma_pinv()

```
real(fgsl_double) function fgsl_cdf_gamma_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.31 fgsl_cdf_gamma_q()

```
real(fgsl_double) function fgsl_cdf_gamma_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.32 fgsl_cdf_gamma_qinv()

```
real(fgsl_double) function fgsl_cdf_gamma_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.33 fgsl_cdf_gaussian_p()

```
real(fgsl_double) function fgsl_cdf_gaussian_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.34 fgsl_cdf_gaussian_pinv()

```
real(fgsl_double) function fgsl_cdf_gaussian_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.35 fgsl_cdf_gaussian_q()

```
real(fgsl_double) function fgsl_cdf_gaussian_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.36 fgsl_cdf_gaussian_qinv()

```
real(fgsl_double) function fgsl_cdf_gaussian_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.37 fgsl_cdf_geometric_p()

```
real(fgsl_double) function fgsl_cdf_geometric_p (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p )
```

49.63.1.38 fgsl_cdf_geometric_q()

```
real(fgsl_double) function fgsl_cdf_geometric_q (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p )
```

49.63.1.39 fgsl_cdf_gumbel1_p()

```
real(fgsl_double) function fgsl_cdf_gumbel1_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.40 fgsl_cdf_gumbel1_pinv()

```
real(fgsl_double) function fgsl_cdf_gumbel1_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.41 fgsl_cdf_gumbel1_q()

```
real(fgsl_double) function fgsl_cdf_gumbel1_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.42 fgsl_cdf_gumbel1_qinv()

```
real(fgsl_double) function fgsl_cdf_gumbel1_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.43 fgsl_cdf_gumbel2_p()

```
real(fgsl_double) function fgsl_cdf_gumbel2_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```


49.63.1.44 fgsl_cdf_gumbel2_pinv()

```
real(fgsl_double) function fgsl_cdf_gumbel2_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.45 fgsl_cdf_gumbel2_q()

```
real(fgsl_double) function fgsl_cdf_gumbel2_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.46 fgsl_cdf_gumbel2_qinv()

```
real(fgsl_double) function fgsl_cdf_gumbel2_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.47 fgsl_cdf_hypergeometric_p()

```
real(fgsl_double) function fgsl_cdf_hypergeometric_p (  
    integer(fgsl_int), intent(in) k,  
    integer(fgsl_int), intent(in) n1,  
    integer(fgsl_int), intent(in) n2,  
    integer(fgsl_int), intent(in) t )
```

49.63.1.48 fgsl_cdf_hypergeometric_q()

```
real(fgsl_double) function fgsl_cdf_hypergeometric_q (  
    integer(fgsl_int), intent(in) k,  
    integer(fgsl_int), intent(in) n1,  
    integer(fgsl_int), intent(in) n2,  
    integer(fgsl_int), intent(in) t )
```

49.63.1.49 fgsl_cdf_laplace_p()

```
real(fgsl_double) function fgsl_cdf_laplace_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a )
```

49.63.1.50 fgsl_cdf_laplace_pinv()

```
real(fgsl_double) function fgsl_cdf_laplace_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) a )
```

49.63.1.51 fgsl_cdf_laplace_q()

```
real(fgsl_double) function fgsl_cdf_laplace_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a )
```

49.63.1.52 fgsl_cdf_laplace_qinv()

```
real(fgsl_double) function fgsl_cdf_laplace_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) a )
```

49.63.1.53 fgsl_cdf_logistic_p()

```
real(fgsl_double) function fgsl_cdf_logistic_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a )
```

49.63.1.54 fgsl_cdf_logistic_pinv()

```
real(fgsl_double) function fgsl_cdf_logistic_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) a )
```

49.63.1.55 fgsl_cdf_logistic_q()

```
real(fgsl_double) function fgsl_cdf_logistic_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a )
```

49.63.1.56 fgsl_cdf_logistic_qinv()

```
real(fgsl_double) function fgsl_cdf_logistic_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) a )
```

49.63.1.57 fgsl_cdf_lognormal_p()

```
real(fgsl_double) function fgsl_cdf_lognormal_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) zeta,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.58 fgsl_cdf_lognormal_pinv()

```
real(fgsl_double) function fgsl_cdf_lognormal_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) zeta,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.59 fgsl_cdf_lognormal_q()

```
real(fgsl_double) function fgsl_cdf_lognormal_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) zeta,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.60 fgsl_cdf_lognormal_qinv()

```
real(fgsl_double) function fgsl_cdf_lognormal_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) zeta,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.61 fgsl_cdf_negative_binomial_p()

```
real(fgsl_double) function fgsl_cdf_negative_binomial_p (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) n )
```

49.63.1.62 fgsl_cdf_negative_binomial_q()

```
real(fgsl_double) function fgsl_cdf_negative_binomial_q (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) n )
```

49.63.1.63 fgsl_cdf_pareto_p()

```
real(fgsl_double) function fgsl_cdf_pareto_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.64 fgsl_cdf_pareto_pinv()

```
real(fgsl_double) function fgsl_cdf_pareto_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.65 fgsl_cdf_pareto_q()

```
real(fgsl_double) function fgsl_cdf_pareto_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.66 fgsl_cdf_pareto_qinv()

```
real(fgsl_double) function fgsl_cdf_pareto_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.67 fgsl_cdf_pascal_p()

```
real(fgsl_double) function fgsl_cdf_pascal_p (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) n )
```

49.63.1.68 fgsl_cdf_pascal_q()

```
real(fgsl_double) function fgsl_cdf_pascal_q (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) n )
```

49.63.1.69 fgsl_cdf_poisson_p()

```
real(fgsl_double) function fgsl_cdf_poisson_p (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) mu )
```

49.63.1.70 fgsl_cdf_poisson_q()

```
real(fgsl_double) function fgsl_cdf_poisson_q (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) mu )
```

49.63.1.71 fgsl_cdf_rayleigh_p()

```
real(fgsl_double) function fgsl_cdf_rayleigh_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.72 fgsl_cdf_rayleigh_pinv()

```
real(fgsl_double) function fgsl_cdf_rayleigh_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.73 fgsl_cdf_rayleigh_q()

```
real(fgsl_double) function fgsl_cdf_rayleigh_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.74 fgsl_cdf_rayleigh_qinv()

```
real(fgsl_double) function fgsl_cdf_rayleigh_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) sigma )
```

49.63.1.75 fgsl_cdf_tdist_p()

```
real(fgsl_double) function fgsl_cdf_tdist_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) nu )
```

49.63.1.76 fgsl_cdf_tdist_pinv()

```
real(fgsl_double) function fgsl_cdf_tdist_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) nu )
```

49.63.1.77 fgsl_cdf_tdist_q()

```
real(fgsl_double) function fgsl_cdf_tdist_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) nu )
```

49.63.1.78 fgsl_cdf_tdist_qinv()

```
real(fgsl_double) function fgsl_cdf_tdist_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) nu )
```

49.63.1.79 fgsl_cdf_ugaussian_p()

```
real(fgsl_double) function fgsl_cdf_ugaussian_p (  
    real(fgsl_double), intent(in) x )
```

49.63.1.80 fgsl_cdf_ugaussian_pinv()

```
real(fgsl_double) function fgsl_cdf_ugaussian_pinv (  
    real(fgsl_double), intent(in) p )
```

49.63.1.81 fgsl_cdf_ugaussian_q()

```
real(fgsl_double) function fgsl_cdf_ugaussian_q (  
    real(fgsl_double), intent(in) x )
```

49.63.1.82 fgsl_cdf_ugaussian_qinv()

```
real(fgsl_double) function fgsl_cdf_ugaussian_qinv (  
    real(fgsl_double), intent(in) q )
```

49.63.1.83 fgsl_cdf_weibull_p()

```
real(fgsl_double) function fgsl_cdf_weibull_p (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.84 fgsl_cdf_weibull_pinv()

```
real(fgsl_double) function fgsl_cdf_weibull_pinv (  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.85 fgsl_cdf_weibull_q()

```
real(fgsl_double) function fgsl_cdf_weibull_q (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.86 fgsl_cdf_weibull_qinv()

```
real(fgsl_double) function fgsl_cdf_weibull_qinv (  
    real(fgsl_double), intent(in) q,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.87 fgsl_qrng_alloc()

```
type(fgsl_qrng) function fgsl_qrng_alloc (  
    type(fgsl_qrng_type), intent(in) t,  
    integer(fgsl_int), intent(in) d )
```

49.63.1.88 fgsl_qrng_clone()

```
type(fgsl_qrng) function fgsl_qrng_clone (  
    type(fgsl_qrng), intent(in) q )
```

49.63.1.89 fgsl_qrng_free()

```
subroutine fgsl_qrng_free (  
    type(fgsl_qrng), intent(inout) r )
```

49.63.1.90 fgsl_qrng_get()

```
integer(fgsl_int) function fgsl_qrng_get (  
    type(fgsl_qrng), intent(in) q,  
    real(fgsl_double), dimension(:), intent(out), target, contiguous x )
```


49.63.1.91 fgsl_qrng_init()

```
subroutine fgsl_qrng_init (  
    type(fgsl_qrng), intent(inout) r )
```

49.63.1.92 fgsl_qrng_memcpy()

```
integer(fgsl_int) function fgsl_qrng_memcpy (  
    type(fgsl_qrng), intent(inout) cpy,  
    type(fgsl_qrng), intent(in) src )
```

49.63.1.93 fgsl_qrng_name()

```
character(kind=fgsl_char, len=fgsl_strmax) function fgsl_qrng_name (  
    type(fgsl_qrng), intent(in) q )
```

49.63.1.94 fgsl_qrng_status()

```
logical function fgsl_qrng_status (  
    type(fgsl_qrng), intent(in) qrng )
```

49.63.1.95 fgsl_ran_bernoulli()

```
integer(fgsl_int) function fgsl_ran_bernoulli (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) p )
```

49.63.1.96 fgsl_ran_bernoulli_pdf()

```
real(fgsl_double) function fgsl_ran_bernoulli_pdf (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p )
```

49.63.1.97 fgsl_ran_beta()

```
real(fgsl_double) function fgsl_ran_beta (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.98 fgsl_ran_beta_pdf()

```
real(fgsl_double) function fgsl_ran_beta_pdf (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.99 fgsl_ran_binomial()

```
real(fgsl_double) function fgsl_ran_binomial (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) p,  
    integer(fgsl_int), intent(in) n )
```

49.63.1.100 fgsl_ran_binomial_pdf()

```
real(fgsl_double) function fgsl_ran_binomial_pdf (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p,  
    integer(fgsl_int), intent(in) n )
```

49.63.1.101 fgsl_ran_bivariate_gaussian()

```
subroutine fgsl_ran_bivariate_gaussian (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) sigma_x,  
    real(fgsl_double), intent(in) sigma_y,  
    real(fgsl_double), intent(in) rho,  
    real(fgsl_double), intent(out) x,  
    real(fgsl_double), intent(out) y )
```

49.63.1.102 fgsl_ran_bivariate_gaussian_pdf()

```
real(fgsl_double) function fgsl_ran_bivariate_gaussian_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    real(fgsl_double), intent(in) sigma_x,
    real(fgsl_double), intent(in) sigma_y,
    real(fgsl_double), intent(in) rho )
```

49.63.1.103 fgsl_ran_cauchy()

```
real(fgsl_double) function fgsl_ran_cauchy (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) a )
```

49.63.1.104 fgsl_ran_cauchy_pdf()

```
real(fgsl_double) function fgsl_ran_cauchy_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) a )
```

49.63.1.105 fgsl_ran_chisq()

```
real(fgsl_double) function fgsl_ran_chisq (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) nu )
```

49.63.1.106 fgsl_ran_chisq_pdf()

```
real(fgsl_double) function fgsl_ran_chisq_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) nu )
```

49.63.1.107 fgsl_ran_choose()

```
integer(fgsl_int) function fgsl_ran_choose (
    type(fgsl_rng), intent(in) r,
    type(c_ptr), intent(in) dest,
    integer(fgsl_size_t), intent(in) k,
    type(c_ptr), intent(in) src,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) size )
```

49.63.1.108 fgsl_ran_dir_2d()

```
subroutine fgsl_ran_dir_2d (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(out) x,  
    real(fgsl_double), intent(out) y )
```

49.63.1.109 fgsl_ran_dir_2d_trig_method()

```
subroutine fgsl_ran_dir_2d_trig_method (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(out) x,  
    real(fgsl_double), intent(out) y )
```

49.63.1.110 fgsl_ran_dir_3d()

```
subroutine fgsl_ran_dir_3d (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(out) x,  
    real(fgsl_double), intent(out) y,  
    real(fgsl_double), intent(out) z )
```

49.63.1.111 fgsl_ran_dir_nd()

```
subroutine fgsl_ran_dir_nd (  
    type(fgsl_rng), intent(in) r,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(out) x )
```

49.63.1.112 fgsl_ran_dirichlet()

```
subroutine fgsl_ran_dirichlet (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous alpha,  
    real(fgsl_double), dimension(:), intent(out), target, contiguous theta )
```

49.63.1.113 fgsl_ran_dirichlet_lnpdf()

```
real(fgsl_double) function fgsl_ran_dirichlet_lnpdf (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous alpha,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous theta )
```

49.63.1.114 fgsl_ran_dirichlet_pdf()

```
real(fgsl_double) function fgsl_ran_dirichlet_pdf (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous alpha,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous theta )
```

49.63.1.115 fgsl_ran_discrete()

```
integer(fgsl_size_t) function fgsl_ran_discrete (  
    type(fgsl_rng), intent(in) r,  
    type(fgsl_ran_discrete_t), intent(in) g )
```

49.63.1.116 fgsl_ran_discrete_free()

```
subroutine fgsl_ran_discrete_free (  
    type(fgsl_ran_discrete_t), intent(inout) g )
```

49.63.1.117 fgsl_ran_discrete_pdf()

```
real(fgsl_double) function fgsl_ran_discrete_pdf (  
    integer(fgsl_size_t), intent(in) k,  
    type(fgsl_ran_discrete_t), intent(in) g )
```

49.63.1.118 fgsl_ran_discrete_preproc()

```
type(fgsl_ran_discrete_t) function fgsl_ran_discrete_preproc (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous p )
```

49.63.1.119 fgsl_ran_discrete_t_status()

```
logical function fgsl_ran_discrete_t_status (
    type(fgsl_ran_discrete_t), intent(in) ran_discrete_t )
```

49.63.1.120 fgsl_ran_exponential()

```
real(fgsl_double) function fgsl_ran_exponential (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) mu )
```

49.63.1.121 fgsl_ran_exponential_pdf()

```
real(fgsl_double) function fgsl_ran_exponential_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) mu )
```

49.63.1.122 fgsl_ran_exppow()

```
real(fgsl_double) function fgsl_ran_exppow (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b )
```

49.63.1.123 fgsl_ran_exppow_pdf()

```
real(fgsl_double) function fgsl_ran_exppow_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b )
```

49.63.1.124 fgsl_ran_fdist()

```
real(fgsl_double) function fgsl_ran_fdist (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) nu1,
    real(fgsl_double), intent(in) nu2 )
```

49.63.1.125 fgsl_ran_fdist_pdf()

```
real(fgsl_double) function fgsl_ran_fdist_pdf (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) nu1,  
    real(fgsl_double), intent(in) nu2 )
```

49.63.1.126 fgsl_ran_flat()

```
real(fgsl_double) function fgsl_ran_flat (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.127 fgsl_ran_flat_pdf()

```
real(fgsl_double) function fgsl_ran_flat_pdf (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.128 fgsl_ran_gamma()

```
real(fgsl_double) function fgsl_ran_gamma (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.129 fgsl_ran_gamma_mt()

```
real(fgsl_double) function fgsl_ran_gamma_mt (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.130 fgsl_ran_gamma_pdf()

```
real(fgsl_double) function fgsl_ran_gamma_pdf (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.131 fgsl_ran_gaussian()

```
real(fgsl_double) function fgsl_ran_gaussian (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.132 fgsl_ran_gaussian_pdf()

```
real(fgsl_double) function fgsl_ran_gaussian_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.133 fgsl_ran_gaussian_ratio_method()

```
real(fgsl_double) function fgsl_ran_gaussian_ratio_method (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.134 fgsl_ran_gaussian_tail()

```
real(fgsl_double) function fgsl_ran_gaussian_tail (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.135 fgsl_ran_gaussian_tail_pdf()

```
real(fgsl_double) function fgsl_ran_gaussian_tail_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.136 fgsl_ran_gaussian_ziggurat()

```
real(fgsl_double) function fgsl_ran_gaussian_ziggurat (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) sigma )
```


49.63.1.137 fgsl_ran_geometric()

```
integer(fgsl_int) function fgsl_ran_geometric (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) p )
```

49.63.1.138 fgsl_ran_geometric_pdf()

```
real(fgsl_double) function fgsl_ran_geometric_pdf (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p )
```

49.63.1.139 fgsl_ran_gumbel1()

```
real(fgsl_double) function fgsl_ran_gumbell (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.140 fgsl_ran_gumbel1_pdf()

```
real(fgsl_double) function fgsl_ran_gumbell_pdf (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.141 fgsl_ran_gumbel2()

```
real(fgsl_double) function fgsl_ran_gumbel2 (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.142 fgsl_ran_gumbel2_pdf()

```
real(fgsl_double) function fgsl_ran_gumbel2_pdf (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.143 fgsl_ran_hypergeometric()

```
integer(fgsl_int) function fgsl_ran_hypergeometric (
    type(fgsl_rng), intent(in) r,
    integer(fgsl_int), intent(in) n1,
    integer(fgsl_int), intent(in) n2,
    integer(fgsl_int), intent(in) t )
```

49.63.1.144 fgsl_ran_hypergeometric_pdf()

```
real(fgsl_double) function fgsl_ran_hypergeometric_pdf (
    integer(fgsl_int), intent(in) k,
    integer(fgsl_int), intent(in) n1,
    integer(fgsl_int), intent(in) n2,
    integer(fgsl_int), intent(in) t )
```

49.63.1.145 fgsl_ran_landau()

```
real(fgsl_double) function fgsl_ran_landau (
    type(fgsl_rng), intent(in) r )
```

49.63.1.146 fgsl_ran_landau_pdf()

```
real(fgsl_double) function fgsl_ran_landau_pdf (
    real(fgsl_double), intent(in) x )
```

49.63.1.147 fgsl_ran_laplace()

```
real(fgsl_double) function fgsl_ran_laplace (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) a )
```

49.63.1.148 fgsl_ran_laplace_pdf()

```
real(fgsl_double) function fgsl_ran_laplace_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) a )
```

49.63.1.149 fgsl_ran_levy()

```
real(fgsl_double) function fgsl_ran_levy (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) c,  
    real(fgsl_double), intent(in) alpha )
```

49.63.1.150 fgsl_ran_levy_skew()

```
real(fgsl_double) function fgsl_ran_levy_skew (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) c,  
    real(fgsl_double), intent(in) alpha,  
    real(fgsl_double), intent(in) beta )
```

49.63.1.151 fgsl_ran_logarithmic()

```
integer(fgsl_int) function fgsl_ran_logarithmic (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) p )
```

49.63.1.152 fgsl_ran_logarithmic_pdf()

```
real(fgsl_double) function fgsl_ran_logarithmic_pdf (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p )
```

49.63.1.153 fgsl_ran_logistic()

```
real(fgsl_double) function fgsl_ran_logistic (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) a )
```

49.63.1.154 fgsl_ran_logistic_pdf()

```
real(fgsl_double) function fgsl_ran_logistic_pdf (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a )
```

49.63.1.155 fgsl_ran_lognormal()

```
real(fgsl_double) function fgsl_ran_lognormal (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) zeta,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.156 fgsl_ran_lognormal_pdf()

```
real(fgsl_double) function fgsl_ran_lognormal_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) zeta,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.157 fgsl_ran_multinomial()

```
subroutine fgsl_ran_multinomial (
    type(fgsl_rng), intent(in) r,
    integer(fgsl_int), intent(in) nn,
    real(fgsl_double), dimension(:), intent(in), target, contiguous p,
    integer(fgsl_int), dimension(:), intent(out), target, contiguous n )
```

49.63.1.158 fgsl_ran_multinomial_lnpdf()

```
real(fgsl_double) function fgsl_ran_multinomial_lnpdf (
    real(fgsl_double), dimension(:), intent(in), target, contiguous p,
    integer(fgsl_int), dimension(:), intent(in), target, contiguous n )
```

49.63.1.159 fgsl_ran_multinomial_pdf()

```
real(fgsl_double) function fgsl_ran_multinomial_pdf (
    real(fgsl_double), dimension(:), intent(in), target, contiguous p,
    integer(fgsl_int), dimension(:), intent(in), target, contiguous n )
```

49.63.1.160 fgsl_ran_multivariate_gaussian()

```
integer(fgsl_int) function fgsl_ran_multivariate_gaussian (
    type(fgsl_rng), intent(in) r,
    type(fgsl_vector), intent(in) mu,
    type(fgsl_matrix), intent(in) l,
    type(fgsl_vector), intent(inout) result )
```

49.63.1.161 fgsl_ran_multivariate_gaussian_log_pdf()

```
integer(fgsl_int) function fgsl_ran_multivariate_gaussian_log_pdf (
    type(fgsl_vector), intent(in) x,
    type(fgsl_vector), intent(in) mu,
    type(fgsl_matrix), intent(in) l,
    real(fgsl_double), intent(inout) result,
    type(fgsl_vector), intent(inout) work )
```

49.63.1.162 fgsl_ran_multivariate_gaussian_mean()

```
integer(fgsl_int) function fgsl_ran_multivariate_gaussian_mean (
    type(fgsl_matrix), intent(in) x,
    type(fgsl_vector), intent(inout) mu_hat )
```

49.63.1.163 fgsl_ran_multivariate_gaussian_pdf()

```
integer(fgsl_int) function fgsl_ran_multivariate_gaussian_pdf (
    type(fgsl_vector), intent(in) x,
    type(fgsl_vector), intent(in) mu,
    type(fgsl_matrix), intent(in) l,
    real(fgsl_double), intent(inout) result,
    type(fgsl_vector), intent(inout) work )
```

49.63.1.164 fgsl_ran_multivariate_gaussian_vcov()

```
integer(fgsl_int) function fgsl_ran_multivariate_gaussian_vcov (
    type(fgsl_matrix), intent(in) x,
    type(fgsl_matrix), intent(inout) sigma_hat )
```

49.63.1.165 fgsl_ran_negative_binomial()

```
integer(fgsl_int) function fgsl_ran_negative_binomial (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) p,
    real(fgsl_double), intent(in) n )
```

49.63.1.166 fgsl_ran_negative_binomial_pdf()

```
real(fgsl_double) function fgsl_ran_negative_binomial_pdf (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) n )
```

49.63.1.167 fgsl_ran_pareto()

```
real(fgsl_double) function fgsl_ran_pareto (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.168 fgsl_ran_pareto_pdf()

```
real(fgsl_double) function fgsl_ran_pareto_pdf (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b )
```

49.63.1.169 fgsl_ran_pascal()

```
integer(fgsl_int) function fgsl_ran_pascal (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) n )
```

49.63.1.170 fgsl_ran_pascal_pdf()

```
real(fgsl_double) function fgsl_ran_pascal_pdf (  
    integer(fgsl_int), intent(in) k,  
    real(fgsl_double), intent(in) p,  
    real(fgsl_double), intent(in) n )
```

49.63.1.171 fgsl_ran_poisson()

```
integer(fgsl_int) function fgsl_ran_poisson (  
    type(fgsl_rng), intent(in) r,  
    real(fgsl_double), intent(in) mu )
```

49.63.1.172 fgsl_ran_poisson_pdf()

```
real(fgsl_double) function fgsl_ran_poisson_pdf (
    integer(fgsl_int), intent(in) k,
    real(fgsl_double), intent(in) mu )
```

49.63.1.173 fgsl_ran_rayleigh()

```
real(fgsl_double) function fgsl_ran_rayleigh (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.174 fgsl_ran_rayleigh_pdf()

```
real(fgsl_double) function fgsl_ran_rayleigh_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.175 fgsl_ran_rayleigh_tail()

```
real(fgsl_double) function fgsl_ran_rayleigh_tail (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.176 fgsl_ran_rayleigh_tail_pdf()

```
real(fgsl_double) function fgsl_ran_rayleigh_tail_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) sigma )
```

49.63.1.177 fgsl_ran_sample()

```
subroutine fgsl_ran_sample (
    type(fgsl_rng), intent(in) r,
    type(c_ptr), intent(in) dest,
    integer(fgsl_size_t), intent(in) k,
    type(c_ptr), intent(in) src,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) size )
```

49.63.1.178 fgsl_ran_shuffle()

```
subroutine fgsl_ran_shuffle (
    type(fgsl_rng), intent(in) r,
    type(c_ptr), intent(in) base,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) size )
```

49.63.1.179 fgsl_ran_shuffle_double()

```
subroutine fgsl_ran_shuffle_double (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), dimension(n), intent(in), target base,
    integer(fgsl_size_t), intent(in) n )
```

49.63.1.180 fgsl_ran_shuffle_size_t()

```
subroutine fgsl_ran_shuffle_size_t (
    type(fgsl_rng), intent(in) r,
    integer(fgsl_size_t), dimension(n), intent(in), target base,
    integer(fgsl_size_t), intent(in) n )
```

49.63.1.181 fgsl_ran_tdist()

```
real(fgsl_double) function fgsl_ran_tdist (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) nu )
```

49.63.1.182 fgsl_ran_tdist_pdf()

```
real(fgsl_double) function fgsl_ran_tdist_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) nu )
```

49.63.1.183 fgsl_ran_u gaussian()

```
real(fgsl_double) function fgsl_ran_u gaussian (
    type(fgsl_rng), intent(in) r )
```


49.63.1.184 fgsl_ran_u gaussian_pdf()

```
real(fgsl_double) function fgsl_ran_u gaussian_pdf (
    real(fgsl_double), intent(in) x )
```

49.63.1.185 fgsl_ran_u gaussian_ratio_method()

```
real(fgsl_double) function fgsl_ran_u gaussian_ratio_method (
    type(fgsl_rng), intent(in) r )
```

49.63.1.186 fgsl_ran_u gaussian_tail()

```
real(fgsl_double) function fgsl_ran_u gaussian_tail (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) a )
```

49.63.1.187 fgsl_ran_u gaussian_tail_pdf()

```
real(fgsl_double) function fgsl_ran_u gaussian_tail_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) a )
```

49.63.1.188 fgsl_ran_weibull()

```
real(fgsl_double) function fgsl_ran_weibull (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b )
```

49.63.1.189 fgsl_ran_weibull_pdf()

```
real(fgsl_double) function fgsl_ran_weibull_pdf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) a,
    real(fgsl_double), intent(in) b )
```

49.63.1.190 fgsl_ran_wishart()

```
integer(fgsl_int) function fgsl_ran_wishart (
    type(fgsl_rng), intent(in) r,
    real(fgsl_double), intent(in) df,
    type(fgsl_matrix), intent(in) l,
    type(fgsl_matrix), intent(inout) result,
    type(fgsl_matrix), intent(inout) work )
```

49.63.1.191 fgsl_ran_wishart_log_pdf()

```
integer(fgsl_int) function fgsl_ran_wishart_log_pdf (
    type(fgsl_matrix), intent(in) x,
    type(fgsl_matrix), intent(in) l_x,
    real(fgsl_double), intent(in) df,
    type(fgsl_matrix), intent(in) l,
    real(fgsl_double), intent(inout) result,
    type(fgsl_matrix), intent(inout) work )
```

49.63.1.192 fgsl_ran_wishart_pdf()

```
integer(fgsl_int) function fgsl_ran_wishart_pdf (
    type(fgsl_matrix), intent(in) x,
    type(fgsl_matrix), intent(in) l_x,
    real(fgsl_double), intent(in) df,
    type(fgsl_matrix), intent(in) l,
    real(fgsl_double), intent(inout) result,
    type(fgsl_matrix), intent(inout) work )
```

49.63.1.193 fgsl_rng_alloc()

```
type(fgsl_rng) function fgsl_rng_alloc (
    type(fgsl_rng_type), intent(inout) t )
```

49.63.1.194 fgsl_rng_c_ptr()

```
subroutine fgsl_rng_c_ptr (
    type(fgsl_rng), intent(out) res,
    type(c_ptr), intent(in) src )
```

49.63.1.195 fgsl_rng_clone()

```
type(fgsl_rng) function fgsl_rng_clone (  
    type(fgsl_rng), intent(in) r )
```

49.63.1.196 fgsl_rng_env_setup()

```
type(fgsl_rng_type) function fgsl_rng_env_setup
```

49.63.1.197 fgsl_rng_fread()

```
integer(fgsl_int) function fgsl_rng_fread (  
    type(fgsl_file), intent(in) stream,  
    type(fgsl_rng), intent(inout) r )
```

49.63.1.198 fgsl_rng_free()

```
subroutine fgsl_rng_free (  
    type(fgsl_rng), intent(inout) r )
```

49.63.1.199 fgsl_rng_fwrite()

```
integer(fgsl_int) function fgsl_rng_fwrite (  
    type(fgsl_file), intent(in) stream,  
    type(fgsl_rng), intent(in) r )
```

49.63.1.200 fgsl_rng_get()

```
integer(fgsl_long) function fgsl_rng_get (  
    type(fgsl_rng), intent(in) r )
```

49.63.1.201 fgsl_rng_max()

```
integer(fgsl_long) function fgsl_rng_max (  
    type(fgsl_rng), intent(in) r )
```

49.63.1.202 fgsl_rng_memcpy()

```
integer(fgsl_int) function fgsl_rng_memcpy (
    type(fgsl_rng), intent(inout) cpy,
    type(fgsl_rng), intent(in) src )
```

49.63.1.203 fgsl_rng_min()

```
integer(fgsl_long) function fgsl_rng_min (
    type(fgsl_rng), intent(in) r )
```

49.63.1.204 fgsl_rng_name()

```
character(kind=fgsl_char, len=fgsl_strmax) function fgsl_rng_name (
    type(fgsl_rng), intent(in) r )
```

49.63.1.205 fgsl_rng_set()

```
subroutine fgsl_rng_set (
    type(fgsl_rng), intent(inout) r,
    integer(fgsl_long), intent(in) s )
```

49.63.1.206 fgsl_rng_status()

```
logical function fgsl_rng_status (
    type(fgsl_rng), intent(in) rng )
```

49.63.1.207 fgsl_rng_uniform()

```
real(fgsl_double) function fgsl_rng_uniform (
    type(fgsl_rng), intent(in) r )
```

49.63.1.208 fgsl_rng_uniform_int()

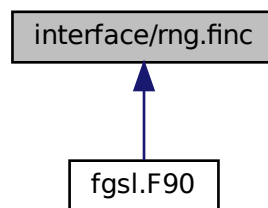
```
integer(fgsl_long) function fgsl_rng_uniform_int (
    type(fgsl_rng), intent(in) r,
    integer(fgsl_long), intent(in) n )
```

49.63.1.209 fgsl_rng_uniform_pos()

```
real(fgsl_double) function fgsl_rng_uniform_pos (
    type(fgsl_rng), intent(in) r )
```

49.64 interface/rng.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- type(c_ptr) function [gsl_rng_alloc](#) (t)
- subroutine [gsl_rng_set](#) (r, s)
- subroutine [gsl_rng_free](#) (r)
- integer(c_long) function [gsl_rng_get](#) (r)
- real(c_double) function [gsl_rng_uniform](#) (r)
- real(c_double) function [gsl_rng_uniform_pos](#) (r)
- integer(c_long) function [gsl_rng_uniform_int](#) (r, n)
- type(c_ptr) function [gsl_rng_name](#) (r)
- integer(c_long) function [gsl_rng_max](#) (r)
- integer(c_long) function [gsl_rng_min](#) (r)
- type(c_ptr) function [gsl_rng_env_setup](#) ()
- integer(c_int) function [gsl_rng_memcpy](#) (cpy, src)
- type(c_ptr) function [gsl_rng_clone](#) (r)
- integer(c_int) function [gsl_rng_fwrite](#) (stream, r)
- integer(c_int) function [gsl_rng_fread](#) (stream, r)
- type(c_ptr) function [fgsl_aux_rng_assign](#) (i)
- type(c_ptr) function [gsl_qrng_alloc](#) (t, d)

- subroutine [gsl_qrng_free](#) (q)
- subroutine [gsl_qrng_init](#) (q)
- integer(c_int) function [gsl_qrng_get](#) (q, x)
- type(c_ptr) function [gsl_qrng_name](#) (q)
- integer(c_int) function [gsl_qrng_memcpy](#) (cpy, src)
- type(c_ptr) function [gsl_qrng_clone](#) (q)
- type(c_ptr) function [fgsl_aux_qrng_assign](#) (i)
- real(c_double) function [gsl_ran_gaussian](#) (r, sigma)
- real(c_double) function [gsl_ran_gaussian_pdf](#) (x, sigma)
- real(c_double) function [gsl_ran_gaussian_ziggurat](#) (r, sigma)
- real(c_double) function [gsl_ran_gaussian_ratio_method](#) (r, sigma)
- real(c_double) function [gsl_ran_ugaussian](#) (r)
- real(c_double) function [gsl_ran_ugaussian_pdf](#) (x)
- real(c_double) function [gsl_ran_ugaussian_ratio_method](#) (r)
- real(c_double) function [gsl_cdf_gaussian_p](#) (x, sigma)
- real(c_double) function [gsl_cdf_gaussian_q](#) (x, sigma)
- real(c_double) function [gsl_cdf_gaussian_pinv](#) (p, sigma)
- real(c_double) function [gsl_cdf_gaussian_qinv](#) (q, sigma)
- real(c_double) function [gsl_cdf_ugaussian_p](#) (x)
- real(c_double) function [gsl_cdf_ugaussian_q](#) (x)
- real(c_double) function [gsl_cdf_ugaussian_pinv](#) (p)
- real(c_double) function [gsl_cdf_ugaussian_qinv](#) (q)
- real(c_double) function [gsl_ran_gaussian_tail](#) (r, a, sigma)
- real(c_double) function [gsl_ran_gaussian_tail_pdf](#) (x, a, sigma)
- real(c_double) function [gsl_ran_ugaussian_tail](#) (r, a)
- real(c_double) function [gsl_ran_ugaussian_tail_pdf](#) (x, a)
- subroutine [gsl_ran_bivariate_gaussian](#) (r, sigma_x, sigma_y, rho, x, y)
- real(c_double) function [gsl_ran_bivariate_gaussian_pdf](#) (x, y, sigma_x, sigma_y, rho)
- integer(c_int) function [gsl_ran_multivariate_gaussian](#) (r, mu, l, result)
- integer(c_int) function [gsl_ran_multivariate_gaussian_pdf](#) (x, mu, l, result, work)
- integer(c_int) function [gsl_ran_multivariate_gaussian_log_pdf](#) (x, mu, l, result, work)
- integer(c_int) function [gsl_ran_multivariate_gaussian_mean](#) (x, mu_hat)
- integer(c_int) function [gsl_ran_multivariate_gaussian_vcov](#) (x, sigma_hat)
- real(c_double) function [gsl_ran_exponential](#) (r, mu)
- real(c_double) function [gsl_ran_exponential_pdf](#) (x, mu)
- real(c_double) function [gsl_cdf_exponential_p](#) (x, mu)
- real(c_double) function [gsl_cdf_exponential_q](#) (x, mu)
- real(c_double) function [gsl_cdf_exponential_pinv](#) (p, mu)
- real(c_double) function [gsl_cdf_exponential_qinv](#) (q, mu)
- real(c_double) function [gsl_ran_laplace](#) (r, a)
- real(c_double) function [gsl_ran_laplace_pdf](#) (x, a)
- real(c_double) function [gsl_cdf_laplace_p](#) (x, a)
- real(c_double) function [gsl_cdf_laplace_q](#) (x, a)
- real(c_double) function [gsl_cdf_laplace_pinv](#) (p, a)
- real(c_double) function [gsl_cdf_laplace_qinv](#) (q, a)
- real(c_double) function [gsl_ran_exppow](#) (r, a, b)
- real(c_double) function [gsl_ran_exppow_pdf](#) (x, a, b)
- real(c_double) function [gsl_cdf_exppow_p](#) (x, a, b)
- real(c_double) function [gsl_cdf_exppow_q](#) (x, a, b)
- real(c_double) function [gsl_ran_cauchy](#) (r, a)
- real(c_double) function [gsl_ran_cauchy_pdf](#) (x, a)
- real(c_double) function [gsl_cdf_cauchy_p](#) (x, a)
- real(c_double) function [gsl_cdf_cauchy_q](#) (x, a)
- real(c_double) function [gsl_cdf_cauchy_pinv](#) (p, a)
- real(c_double) function [gsl_cdf_cauchy_qinv](#) (q, a)

- real(c_double) function [gsl_ran_rayleigh](#) (r, sigma)
- real(c_double) function [gsl_ran_rayleigh_pdf](#) (x, sigma)
- real(c_double) function [gsl_cdf_rayleigh_p](#) (x, sigma)
- real(c_double) function [gsl_cdf_rayleigh_q](#) (x, sigma)
- real(c_double) function [gsl_cdf_rayleigh_pinv](#) (p, sigma)
- real(c_double) function [gsl_cdf_rayleigh_qinv](#) (q, sigma)
- real(c_double) function [gsl_ran_rayleigh_tail](#) (r, a, sigma)
- real(c_double) function [gsl_ran_rayleigh_tail_pdf](#) (x, a, sigma)
- real(c_double) function [gsl_ran_landau](#) (r)
- real(c_double) function [gsl_ran_landau_pdf](#) (x)
- real(c_double) function [gsl_ran_levy](#) (r, c, alpha)
- real(c_double) function [gsl_ran_levy_skew](#) (r, c, alpha, beta)
- real(c_double) function [gsl_ran_gamma](#) (r, a, b)
- real(c_double) function [gsl_ran_gamma_mt](#) (r, a, b)
- real(c_double) function [gsl_ran_gamma_pdf](#) (x, a, b)
- real(c_double) function [gsl_cdf_gamma_p](#) (x, a, b)
- real(c_double) function [gsl_cdf_gamma_q](#) (x, a, b)
- real(c_double) function [gsl_cdf_gamma_pinv](#) (p, a, b)
- real(c_double) function [gsl_cdf_gamma_qinv](#) (q, a, b)
- real(c_double) function [gsl_ran_flat](#) (r, a, b)
- real(c_double) function [gsl_ran_flat_pdf](#) (x, a, b)
- real(c_double) function [gsl_cdf_flat_p](#) (x, a, b)
- real(c_double) function [gsl_cdf_flat_q](#) (x, a, b)
- real(c_double) function [gsl_cdf_flat_pinv](#) (p, a, b)
- real(c_double) function [gsl_cdf_flat_qinv](#) (q, a, b)
- real(c_double) function [gsl_ran_lognormal](#) (r, zeta, sigma)
- real(c_double) function [gsl_ran_lognormal_pdf](#) (x, zeta, sigma)
- real(c_double) function [gsl_cdf_lognormal_p](#) (x, zeta, sigma)
- real(c_double) function [gsl_cdf_lognormal_q](#) (x, zeta, sigma)
- real(c_double) function [gsl_cdf_lognormal_pinv](#) (p, zeta, sigma)
- real(c_double) function [gsl_cdf_lognormal_qinv](#) (q, zeta, sigma)
- real(c_double) function [gsl_ran_chisq](#) (r, nu)
- real(c_double) function [gsl_ran_chisq_pdf](#) (x, nu)
- real(c_double) function [gsl_cdf_chisq_p](#) (x, nu)
- real(c_double) function [gsl_cdf_chisq_q](#) (x, nu)
- real(c_double) function [gsl_cdf_chisq_pinv](#) (p, nu)
- real(c_double) function [gsl_cdf_chisq_qinv](#) (q, nu)
- real(c_double) function [gsl_ran_fdist](#) (r, nu1, nu2)
- real(c_double) function [gsl_ran_fdist_pdf](#) (x, nu1, nu2)
- real(c_double) function [gsl_cdf_fdist_p](#) (x, nu1, nu2)
- real(c_double) function [gsl_cdf_fdist_q](#) (x, nu1, nu2)
- real(c_double) function [gsl_cdf_fdist_pinv](#) (p, nu1, nu2)
- real(c_double) function [gsl_cdf_fdist_qinv](#) (q, nu1, nu2)
- real(c_double) function [gsl_ran_tdist](#) (r, nu)
- real(c_double) function [gsl_ran_tdist_pdf](#) (x, nu)
- real(c_double) function [gsl_cdf_tdist_p](#) (x, nu)
- real(c_double) function [gsl_cdf_tdist_q](#) (x, nu)
- real(c_double) function [gsl_cdf_tdist_pinv](#) (p, nu)
- real(c_double) function [gsl_cdf_tdist_qinv](#) (q, nu)
- real(c_double) function [gsl_ran_beta](#) (r, a, b)
- real(c_double) function [gsl_ran_beta_pdf](#) (x, a, b)
- real(c_double) function [gsl_cdf_beta_p](#) (x, a, b)
- real(c_double) function [gsl_cdf_beta_q](#) (x, a, b)
- real(c_double) function [gsl_cdf_beta_pinv](#) (p, a, b)
- real(c_double) function [gsl_cdf_beta_qinv](#) (q, a, b)

- `real(c_double)` function [gsl_ran_logistic](#) (r, a)
- `real(c_double)` function [gsl_ran_logistic_pdf](#) (x, a)
- `real(c_double)` function [gsl_cdf_logistic_p](#) (x, a)
- `real(c_double)` function [gsl_cdf_logistic_q](#) (x, a)
- `real(c_double)` function [gsl_cdf_logistic_pinv](#) (p, a)
- `real(c_double)` function [gsl_cdf_logistic_qinv](#) (q, a)
- `real(c_double)` function [gsl_ran_pareto](#) (r, a, b)
- `real(c_double)` function [gsl_ran_pareto_pdf](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_pareto_p](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_pareto_q](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_pareto_pinv](#) (p, a, b)
- `real(c_double)` function [gsl_cdf_pareto_qinv](#) (q, a, b)
- subroutine [gsl_ran_dir_2d](#) (r, x, y)
- subroutine [gsl_ran_dir_2d_trig_method](#) (r, x, y)
- subroutine [gsl_ran_dir_3d](#) (r, x, y, z)
- subroutine [gsl_ran_dir_nd](#) (r, n, x)
- `real(c_double)` function [gsl_ran_weibull](#) (r, a, b)
- `real(c_double)` function [gsl_ran_weibull_pdf](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_weibull_p](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_weibull_q](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_weibull_pinv](#) (p, a, b)
- `real(c_double)` function [gsl_cdf_weibull_qinv](#) (p, a, b)
- `real(c_double)` function [gsl_ran_gumbel1](#) (r, a, b)
- `real(c_double)` function [gsl_ran_gumbel1_pdf](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_gumbel1_p](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_gumbel1_q](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_gumbel1_pinv](#) (p, a, b)
- `real(c_double)` function [gsl_cdf_gumbel1_qinv](#) (p, a, b)
- `real(c_double)` function [gsl_ran_gumbel2](#) (r, a, b)
- `real(c_double)` function [gsl_ran_gumbel2_pdf](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_gumbel2_p](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_gumbel2_q](#) (x, a, b)
- `real(c_double)` function [gsl_cdf_gumbel2_pinv](#) (p, a, b)
- `real(c_double)` function [gsl_cdf_gumbel2_qinv](#) (p, a, b)
- subroutine [gsl_ran_dirichlet](#) (r, k, alpha, theta)
- `real(c_double)` function [gsl_ran_dirichlet_pdf](#) (k, alpha, theta)
- `real(c_double)` function [gsl_ran_dirichlet_lnpdf](#) (k, alpha, theta)
- `type(c_ptr)` function [gsl_ran_discrete_preproc](#) (k, p)
- `integer(c_size_t)` function [gsl_ran_discrete](#) (r, g)
- `real(c_double)` function [gsl_ran_discrete_pdf](#) (k, g)
- subroutine [gsl_ran_discrete_free](#) (g)
- `integer(c_int)` function [gsl_ran_poisson](#) (r, mu)
- `real(c_double)` function [gsl_ran_poisson_pdf](#) (k, mu)
- `real(c_double)` function [gsl_cdf_poisson_p](#) (k, mu)
- `real(c_double)` function [gsl_cdf_poisson_q](#) (k, mu)
- `integer(c_int)` function [gsl_ran_bernoulli](#) (r, p)
- `real(c_double)` function [gsl_ran_bernoulli_pdf](#) (k, p)
- `real(c_double)` function [gsl_ran_binomial](#) (r, p, n)
- `real(c_double)` function [gsl_ran_binomial_pdf](#) (k, p, n)
- `real(c_double)` function [gsl_cdf_binomial_p](#) (k, p, n)
- `real(c_double)` function [gsl_cdf_binomial_q](#) (k, p, n)
- subroutine [gsl_ran_multinomial](#) (r, k, nn, p, n)
- `real(c_double)` function [gsl_ran_multinomial_pdf](#) (k, p, n)
- `real(c_double)` function [gsl_ran_multinomial_lnpdf](#) (k, p, n)
- `integer(c_int)` function [gsl_ran_negative_binomial](#) (r, p, n)

- `real(c_double)` function [gsl_ran_negative_binomial_pdf](#) (`k`, `p`, `n`)
- `real(c_double)` function [gsl_cdf_negative_binomial_p](#) (`k`, `p`, `n`)
- `real(c_double)` function [gsl_cdf_negative_binomial_q](#) (`k`, `p`, `n`)
- `integer(c_int)` function [gsl_ran_pascal](#) (`r`, `p`, `n`)
- `real(c_double)` function [gsl_ran_pascal_pdf](#) (`k`, `p`, `n`)
- `real(c_double)` function [gsl_cdf_pascal_p](#) (`k`, `p`, `n`)
- `real(c_double)` function [gsl_cdf_pascal_q](#) (`k`, `p`, `n`)
- `integer(c_int)` function [gsl_ran_geometric](#) (`r`, `p`)
- `real(c_double)` function [gsl_ran_geometric_pdf](#) (`k`, `p`)
- `real(c_double)` function [gsl_cdf_geometric_p](#) (`k`, `p`)
- `real(c_double)` function [gsl_cdf_geometric_q](#) (`k`, `p`)
- `integer(c_int)` function [gsl_ran_hypergeometric](#) (`r`, `n1`, `n2`, `t`)
- `real(c_double)` function [gsl_ran_hypergeometric_pdf](#) (`k`, `n1`, `n2`, `t`)
- `real(c_double)` function [gsl_cdf_hypergeometric_p](#) (`k`, `n1`, `n2`, `t`)
- `real(c_double)` function [gsl_cdf_hypergeometric_q](#) (`k`, `n1`, `n2`, `t`)
- `integer(c_int)` function [gsl_ran_logarithmic](#) (`r`, `p`)
- `real(c_double)` function [gsl_ran_logarithmic_pdf](#) (`k`, `p`)
- `integer(c_int)` function [gsl_ran_wishart](#) (`r`, `df`, `l`, `result`, `work`)
- `integer(c_int)` function [gsl_ran_wishart_pdf](#) (`x`, `l_x`, `df`, `l`, `result`, `work`)
- `integer(c_int)` function [gsl_ran_wishart_log_pdf](#) (`x`, `l_x`, `df`, `l`, `result`, `work`)
- subroutine [gsl_ran_shuffle](#) (`r`, `base`, `n`, `size`)
- `integer(c_int)` function [gsl_ran_choose](#) (`r`, `dest`, `k`, `src`, `n`, `size`)
- subroutine [gsl_ran_sample](#) (`r`, `dest`, `k`, `src`, `n`, `size`)

49.64.1 Function/Subroutine Documentation

49.64.1.1 fgsl_aux_qrng_assign()

```
type(c_ptr) function fgsl_aux_qrng_assign (
    integer(c_int), value i )
```

49.64.1.2 fgsl_aux_rng_assign()

```
type(c_ptr) function fgsl_aux_rng_assign (
    integer(c_int), value i )
```

49.64.1.3 gsl_cdf_beta_p()

```
real(c_double) function gsl_cdf_beta_p (
    real(c_double), value x,
    real(c_double), value a,
    real(c_double), value b )
```

49.64.1.4 `gsl_cdf_beta_pinv()`

```
real(c_double) function gsl_cdf_beta_pinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.5 `gsl_cdf_beta_q()`

```
real(c_double) function gsl_cdf_beta_q (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.6 `gsl_cdf_beta_qinv()`

```
real(c_double) function gsl_cdf_beta_qinv (  
    real(c_double), value q,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.7 `gsl_cdf_binomial_p()`

```
real(c_double) function gsl_cdf_binomial_p (  
    integer(c_int), value k,  
    real(c_double), value p,  
    integer(c_int), value n )
```

49.64.1.8 `gsl_cdf_binomial_q()`

```
real(c_double) function gsl_cdf_binomial_q (  
    integer(c_int), value k,  
    real(c_double), value p,  
    integer(c_int), value n )
```

49.64.1.9 `gsl_cdf_cauchy_p()`

```
real(c_double) function gsl_cdf_cauchy_p (  
    real(c_double), value x,  
    real(c_double), value a )
```

49.64.1.10 gsl_cdf_cauchy_pinv()

```
real(c_double) function gsl_cdf_cauchy_pinv (  
    real(c_double), value p,  
    real(c_double), value a )
```

49.64.1.11 gsl_cdf_cauchy_q()

```
real(c_double) function gsl_cdf_cauchy_q (  
    real(c_double), value x,  
    real(c_double), value a )
```

49.64.1.12 gsl_cdf_cauchy_qinv()

```
real(c_double) function gsl_cdf_cauchy_qinv (  
    real(c_double), value q,  
    real(c_double), value a )
```

49.64.1.13 gsl_cdf_chisq_p()

```
real(c_double) function gsl_cdf_chisq_p (  
    real(c_double), value x,  
    real(c_double), value nu )
```

49.64.1.14 gsl_cdf_chisq_pinv()

```
real(c_double) function gsl_cdf_chisq_pinv (  
    real(c_double), value p,  
    real(c_double), value nu )
```

49.64.1.15 gsl_cdf_chisq_q()

```
real(c_double) function gsl_cdf_chisq_q (  
    real(c_double), value x,  
    real(c_double), value nu )
```

49.64.1.16 gsl_cdf_chisq_qinv()

```
real(c_double) function gsl_cdf_chisq_qinv (  
    real(c_double), value q,  
    real(c_double), value nu )
```

49.64.1.17 gsl_cdf_exponential_p()

```
real(c_double) function gsl_cdf_exponential_p (  
    real(c_double), value x,  
    real(c_double), value mu )
```

49.64.1.18 gsl_cdf_exponential_pinv()

```
real(c_double) function gsl_cdf_exponential_pinv (  
    real(c_double), value p,  
    real(c_double), value mu )
```

49.64.1.19 gsl_cdf_exponential_q()

```
real(c_double) function gsl_cdf_exponential_q (  
    real(c_double), value x,  
    real(c_double), value mu )
```

49.64.1.20 gsl_cdf_exponential_qinv()

```
real(c_double) function gsl_cdf_exponential_qinv (  
    real(c_double), value q,  
    real(c_double), value mu )
```

49.64.1.21 gsl_cdf_exppow_p()

```
real(c_double) function gsl_cdf_exppow_p (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.22 gsl_cdf_exppow_q()

```
real(c_double) function gsl_cdf_exppow_q (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.23 gsl_cdf_fdist_p()

```
real(c_double) function gsl_cdf_fdist_p (  
    real(c_double), value x,  
    real(c_double), value nu1,  
    real(c_double), value nu2 )
```

49.64.1.24 gsl_cdf_fdist_pinv()

```
real(c_double) function gsl_cdf_fdist_pinv (  
    real(c_double), value p,  
    real(c_double), value nu1,  
    real(c_double), value nu2 )
```

49.64.1.25 gsl_cdf_fdist_q()

```
real(c_double) function gsl_cdf_fdist_q (  
    real(c_double), value x,  
    real(c_double), value nu1,  
    real(c_double), value nu2 )
```

49.64.1.26 gsl_cdf_fdist_qinv()

```
real(c_double) function gsl_cdf_fdist_qinv (  
    real(c_double), value q,  
    real(c_double), value nu1,  
    real(c_double), value nu2 )
```

49.64.1.27 gsl_cdf_flat_p()

```
real(c_double) function gsl_cdf_flat_p (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.28 gsl_cdf_flat_pinv()

```
real(c_double) function gsl_cdf_flat_pinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.29 gsl_cdf_flat_q()

```
real(c_double) function gsl_cdf_flat_q (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.30 gsl_cdf_flat_qinv()

```
real(c_double) function gsl_cdf_flat_qinv (  
    real(c_double), value q,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.31 gsl_cdf_gamma_p()

```
real(c_double) function gsl_cdf_gamma_p (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.32 gsl_cdf_gamma_pinv()

```
real(c_double) function gsl_cdf_gamma_pinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.33 gsl_cdf_gamma_q()

```
real(c_double) function gsl_cdf_gamma_q (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.34 gsl_cdf_gamma_qinv()

```
real(c_double) function gsl_cdf_gamma_qinv (  
    real(c_double), value q,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.35 gsl_cdf_gaussian_p()

```
real(c_double) function gsl_cdf_gaussian_p (  
    real(c_double), value x,  
    real(c_double), value sigma )
```

49.64.1.36 gsl_cdf_gaussian_pinv()

```
real(c_double) function gsl_cdf_gaussian_pinv (  
    real(c_double), value p,  
    real(c_double), value sigma )
```

49.64.1.37 gsl_cdf_gaussian_q()

```
real(c_double) function gsl_cdf_gaussian_q (  
    real(c_double), value x,  
    real(c_double), value sigma )
```

49.64.1.38 gsl_cdf_gaussian_qinv()

```
real(c_double) function gsl_cdf_gaussian_qinv (  
    real(c_double), value q,  
    real(c_double), value sigma )
```

49.64.1.39 gsl_cdf_geometric_p()

```
real(c_double) function gsl_cdf_geometric_p (  
    integer(c_int), value k,  
    real(c_double), value p )
```

49.64.1.40 gsl_cdf_geometric_q()

```
real(c_double) function gsl_cdf_geometric_q (  
    integer(c_int), value k,  
    real(c_double), value p )
```

49.64.1.41 gsl_cdf_gumbel1_p()

```
real(c_double) function gsl_cdf_gumbel1_p (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.42 gsl_cdf_gumbel1_pinv()

```
real(c_double) function gsl_cdf_gumbel1_pinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.43 gsl_cdf_gumbel1_q()

```
real(c_double) function gsl_cdf_gumbel1_q (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.44 gsl_cdf_gumbel1_qinv()

```
real(c_double) function gsl_cdf_gumbel1_qinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.45 gsl_cdf_gumbel2_p()

```
real(c_double) function gsl_cdf_gumbel2_p (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```


49.64.1.46 gsl_cdf_gumbel2_pinv()

```
real(c_double) function gsl_cdf_gumbel2_pinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.47 gsl_cdf_gumbel2_q()

```
real(c_double) function gsl_cdf_gumbel2_q (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.48 gsl_cdf_gumbel2_qinv()

```
real(c_double) function gsl_cdf_gumbel2_qinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.49 gsl_cdf_hypergeometric_p()

```
real(c_double) function gsl_cdf_hypergeometric_p (  
    integer(c_int), value k,  
    integer(c_int), value n1,  
    integer(c_int), value n2,  
    integer(c_int), value t )
```

49.64.1.50 gsl_cdf_hypergeometric_q()

```
real(c_double) function gsl_cdf_hypergeometric_q (  
    integer(c_int), value k,  
    integer(c_int), value n1,  
    integer(c_int), value n2,  
    integer(c_int), value t )
```

49.64.1.51 gsl_cdf_laplace_p()

```
real(c_double) function gsl_cdf_laplace_p (  
    real(c_double), value x,  
    real(c_double), value a )
```

49.64.1.52 gsl_cdf_laplace_pinv()

```
real(c_double) function gsl_cdf_laplace_pinv (  
    real(c_double), value p,  
    real(c_double), value a )
```

49.64.1.53 gsl_cdf_laplace_q()

```
real(c_double) function gsl_cdf_laplace_q (  
    real(c_double), value x,  
    real(c_double), value a )
```

49.64.1.54 gsl_cdf_laplace_qinv()

```
real(c_double) function gsl_cdf_laplace_qinv (  
    real(c_double), value q,  
    real(c_double), value a )
```

49.64.1.55 gsl_cdf_logistic_p()

```
real(c_double) function gsl_cdf_logistic_p (  
    real(c_double), value x,  
    real(c_double), value a )
```

49.64.1.56 gsl_cdf_logistic_pinv()

```
real(c_double) function gsl_cdf_logistic_pinv (  
    real(c_double), value p,  
    real(c_double), value a )
```

49.64.1.57 gsl_cdf_logistic_q()

```
real(c_double) function gsl_cdf_logistic_q (  
    real(c_double), value x,  
    real(c_double), value a )
```

49.64.1.58 gsl_cdf_logistic_qinv()

```
real(c_double) function gsl_cdf_logistic_qinv (  
    real(c_double), value q,  
    real(c_double), value a )
```

49.64.1.59 gsl_cdf_lognormal_p()

```
real(c_double) function gsl_cdf_lognormal_p (  
    real(c_double), value x,  
    real(c_double), value zeta,  
    real(c_double), value sigma )
```

49.64.1.60 gsl_cdf_lognormal_pinv()

```
real(c_double) function gsl_cdf_lognormal_pinv (  
    real(c_double), value p,  
    real(c_double), value zeta,  
    real(c_double), value sigma )
```

49.64.1.61 gsl_cdf_lognormal_q()

```
real(c_double) function gsl_cdf_lognormal_q (  
    real(c_double), value x,  
    real(c_double), value zeta,  
    real(c_double), value sigma )
```

49.64.1.62 gsl_cdf_lognormal_qinv()

```
real(c_double) function gsl_cdf_lognormal_qinv (  
    real(c_double), value q,  
    real(c_double), value zeta,  
    real(c_double), value sigma )
```

49.64.1.63 gsl_cdf_negative_binomial_p()

```
real(c_double) function gsl_cdf_negative_binomial_p (  
    integer(c_int), value k,  
    real(c_double), value p,  
    real(c_double), value n )
```

49.64.1.64 gsl_cdf_negative_binomial_q()

```
real(c_double) function gsl_cdf_negative_binomial_q (  
    integer(c_int), value k,  
    real(c_double), value p,  
    real(c_double), value n )
```

49.64.1.65 gsl_cdf_pareto_p()

```
real(c_double) function gsl_cdf_pareto_p (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.66 gsl_cdf_pareto_pinv()

```
real(c_double) function gsl_cdf_pareto_pinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.67 gsl_cdf_pareto_q()

```
real(c_double) function gsl_cdf_pareto_q (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.68 gsl_cdf_pareto_qinv()

```
real(c_double) function gsl_cdf_pareto_qinv (  
    real(c_double), value q,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.69 gsl_cdf_pascal_p()

```
real(c_double) function gsl_cdf_pascal_p (  
    integer(c_int), value k,  
    real(c_double), value p,  
    real(c_double), value n )
```

49.64.1.70 gsl_cdf_pascal_q()

```
real(c_double) function gsl_cdf_pascal_q (  
    integer(c_int), value k,  
    real(c_double), value p,  
    real(c_double), value n )
```

49.64.1.71 gsl_cdf_poisson_p()

```
real(c_double) function gsl_cdf_poisson_p (  
    integer(c_int), value k,  
    real(c_double), value mu )
```

49.64.1.72 gsl_cdf_poisson_q()

```
real(c_double) function gsl_cdf_poisson_q (  
    integer(c_int), value k,  
    real(c_double), value mu )
```

49.64.1.73 gsl_cdf_rayleigh_p()

```
real(c_double) function gsl_cdf_rayleigh_p (  
    real(c_double), value x,  
    real(c_double), value sigma )
```

49.64.1.74 gsl_cdf_rayleigh_pinv()

```
real(c_double) function gsl_cdf_rayleigh_pinv (  
    real(c_double), value p,  
    real(c_double), value sigma )
```

49.64.1.75 gsl_cdf_rayleigh_q()

```
real(c_double) function gsl_cdf_rayleigh_q (  
    real(c_double), value x,  
    real(c_double), value sigma )
```

49.64.1.76 gsl_cdf_rayleigh_qinv()

```
real(c_double) function gsl_cdf_rayleigh_qinv (  
    real(c_double), value q,  
    real(c_double), value sigma )
```

49.64.1.77 gsl_cdf_tdist_p()

```
real(c_double) function gsl_cdf_tdist_p (  
    real(c_double), value x,  
    real(c_double), value nu )
```

49.64.1.78 gsl_cdf_tdist_pinv()

```
real(c_double) function gsl_cdf_tdist_pinv (  
    real(c_double), value p,  
    real(c_double), value nu )
```

49.64.1.79 gsl_cdf_tdist_q()

```
real(c_double) function gsl_cdf_tdist_q (  
    real(c_double), value x,  
    real(c_double), value nu )
```

49.64.1.80 gsl_cdf_tdist_qinv()

```
real(c_double) function gsl_cdf_tdist_qinv (  
    real(c_double), value q,  
    real(c_double), value nu )
```

49.64.1.81 gsl_cdf_ugaussian_p()

```
real(c_double) function gsl_cdf_ugaussian_p (  
    real(c_double), value x )
```

49.64.1.82 gsl_cdf_ugaussian_pinv()

```
real(c_double) function gsl_cdf_ugaussian_pinv (  
    real(c_double), value p )
```

49.64.1.83 gsl_cdf_ugaussian_q()

```
real(c_double) function gsl_cdf_ugaussian_q (  
    real(c_double), value x )
```

49.64.1.84 gsl_cdf_ugaussian_qinv()

```
real(c_double) function gsl_cdf_ugaussian_qinv (  
    real(c_double), value q )
```

49.64.1.85 gsl_cdf_weibull_p()

```
real(c_double) function gsl_cdf_weibull_p (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.86 gsl_cdf_weibull_pinv()

```
real(c_double) function gsl_cdf_weibull_pinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.87 gsl_cdf_weibull_q()

```
real(c_double) function gsl_cdf_weibull_q (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.88 gsl_cdf_weibull_qinv()

```
real(c_double) function gsl_cdf_weibull_qinv (  
    real(c_double), value p,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.89 gsl_qrng_alloc()

```
type(c_ptr) function gsl_qrng_alloc (  
    type(c_ptr), value t,  
    integer(c_int), value d )
```

49.64.1.90 gsl_qrng_clone()

```
type(c_ptr) function gsl_qrng_clone (  
    type(c_ptr), value q )
```

49.64.1.91 gsl_qrng_free()

```
subroutine gsl_qrng_free (  
    type(c_ptr), value q )
```

49.64.1.92 gsl_qrng_get()

```
integer(c_int) function gsl_qrng_get (  
    type(c_ptr), value q,  
    type(c_ptr), value x )
```


49.64.1.93 gsl_qrng_init()

```
subroutine gsl_qrng_init (
    type(c_ptr), value q )
```

49.64.1.94 gsl_qrng_memcpy()

```
integer(c_int) function gsl_qrng_memcpy (
    type(c_ptr), value cpy,
    type(c_ptr), value src )
```

49.64.1.95 gsl_qrng_name()

```
type(c_ptr) function gsl_qrng_name (
    type(c_ptr), value q )
```

49.64.1.96 gsl_ran_bernoulli()

```
integer(c_int) function gsl_ran_bernoulli (
    type(c_ptr), value r,
    real(c_double), value p )
```

49.64.1.97 gsl_ran_bernoulli_pdf()

```
real(c_double) function gsl_ran_bernoulli_pdf (
    integer(c_int), value k,
    real(c_double), value p )
```

49.64.1.98 gsl_ran_beta()

```
real(c_double) function gsl_ran_beta (
    type(c_ptr), value r,
    real(c_double), value a,
    real(c_double), value b )
```

49.64.1.99 gsl_ran_beta_pdf()

```
real(c_double) function gsl_ran_beta_pdf (
    real(c_double), value x,
    real(c_double), value a,
    real(c_double), value b )
```

49.64.1.100 gsl_ran_binomial()

```
real(c_double) function gsl_ran_binomial (
    type(c_ptr), value r,
    real(c_double), value p,
    integer(c_int), value n )
```

49.64.1.101 gsl_ran_binomial_pdf()

```
real(c_double) function gsl_ran_binomial_pdf (
    integer(c_int), value k,
    real(c_double), value p,
    integer(c_int), value n )
```

49.64.1.102 gsl_ran_bivariate_gaussian()

```
subroutine gsl_ran_bivariate_gaussian (
    type(c_ptr), value r,
    real(c_double), value sigma_x,
    real(c_double), value sigma_y,
    real(c_double), value rho,
    real(c_double), intent(out) x,
    real(c_double), intent(out) y )
```

49.64.1.103 gsl_ran_bivariate_gaussian_pdf()

```
real(c_double) function gsl_ran_bivariate_gaussian_pdf (
    real(c_double), value x,
    real(c_double), value y,
    real(c_double), value sigma_x,
    real(c_double), value sigma_y,
    real(c_double), value rho )
```

49.64.1.104 gsl_ran_cauchy()

```
real(c_double) function gsl_ran_cauchy (
    type(c_ptr), value r,
    real(c_double), value a )
```

49.64.1.105 gsl_ran_cauchy_pdf()

```
real(c_double) function gsl_ran_cauchy_pdf (
    real(c_double), value x,
    real(c_double), value a )
```

49.64.1.106 gsl_ran_chisq()

```
real(c_double) function gsl_ran_chisq (
    type(c_ptr), value r,
    real(c_double), value nu )
```

49.64.1.107 gsl_ran_chisq_pdf()

```
real(c_double) function gsl_ran_chisq_pdf (
    real(c_double), value x,
    real(c_double), value nu )
```

49.64.1.108 gsl_ran_choose()

```
integer(c_int) function gsl_ran_choose (
    type(c_ptr), value r,
    type(c_ptr), value dest,
    integer(c_size_t), value k,
    type(c_ptr), value src,
    integer(c_size_t), value n,
    integer(c_size_t), value size )
```

49.64.1.109 gsl_ran_dir_2d()

```
subroutine gsl_ran_dir_2d (
    type(c_ptr), value r,
    real(c_double), intent(out) x,
    real(c_double), intent(out) y )
```

49.64.1.110 gsl_ran_dir_2d_trig_method()

```
subroutine gsl_ran_dir_2d_trig_method (
    type(c_ptr), value r,
    real(c_double), intent(out) x,
    real(c_double), intent(out) y )
```

49.64.1.111 gsl_ran_dir_3d()

```
subroutine gsl_ran_dir_3d (
    type(c_ptr), value r,
    real(c_double), intent(out) x,
    real(c_double), intent(out) y,
    real(c_double), intent(out) z )
```

49.64.1.112 gsl_ran_dir_nd()

```
subroutine gsl_ran_dir_nd (
    type(c_ptr), value r,
    integer(c_size_t), value n,
    real(c_double), intent(out) x )
```

49.64.1.113 gsl_ran_dirichlet()

```
subroutine gsl_ran_dirichlet (
    type(c_ptr), value r,
    integer(c_size_t), value k,
    type(c_ptr), value alpha,
    type(c_ptr), value theta )
```

49.64.1.114 gsl_ran_dirichlet_lnpdf()

```
real(c_double) function gsl_ran_dirichlet_lnpdf (
    integer(c_size_t), value k,
    type(c_ptr), value alpha,
    type(c_ptr), value theta )
```

49.64.1.115 gsl_ran_dirichlet_pdf()

```
real(c_double) function gsl_ran_dirichlet_pdf (
    integer(c_size_t), value k,
    type(c_ptr), value alpha,
    type(c_ptr), value theta )
```

49.64.1.116 gsl_ran_discrete()

```
integer(c_size_t) function gsl_ran_discrete (
    type(c_ptr), value r,
    type(c_ptr), value g )
```

49.64.1.117 gsl_ran_discrete_free()

```
subroutine gsl_ran_discrete_free (
    type(c_ptr), value g )
```

49.64.1.118 gsl_ran_discrete_pdf()

```
real(c_double) function gsl_ran_discrete_pdf (
    integer(c_size_t), value k,
    type(c_ptr), value g )
```

49.64.1.119 gsl_ran_discrete_preproc()

```
type(c_ptr) function gsl_ran_discrete_preproc (
    integer(c_size_t), value k,
    type(c_ptr), value p )
```

49.64.1.120 gsl_ran_exponential()

```
real(c_double) function gsl_ran_exponential (
    type(c_ptr), value r,
    real(c_double), value mu )
```

49.64.1.121 gsl_ran_exponential_pdf()

```
real(c_double) function gsl_ran_exponential_pdf (  
    real(c_double), value x,  
    real(c_double), value mu )
```

49.64.1.122 gsl_ran_exppow()

```
real(c_double) function gsl_ran_exppow (  
    type(c_ptr), value r,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.123 gsl_ran_exppow_pdf()

```
real(c_double) function gsl_ran_exppow_pdf (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.124 gsl_ran_fdist()

```
real(c_double) function gsl_ran_fdist (  
    type(c_ptr), value r,  
    real(c_double), value nu1,  
    real(c_double), value nu2 )
```

49.64.1.125 gsl_ran_fdist_pdf()

```
real(c_double) function gsl_ran_fdist_pdf (  
    real(c_double), value x,  
    real(c_double), value nu1,  
    real(c_double), value nu2 )
```

49.64.1.126 gsl_ran_flat()

```
real(c_double) function gsl_ran_flat (  
    type(c_ptr), value r,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.127 gsl_ran_flat_pdf()

```
real(c_double) function gsl_ran_flat_pdf (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.128 gsl_ran_gamma()

```
real(c_double) function gsl_ran_gamma (  
    type(c_ptr), value r,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.129 gsl_ran_gamma_mt()

```
real(c_double) function gsl_ran_gamma_mt (  
    type(c_ptr), value r,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.130 gsl_ran_gamma_pdf()

```
real(c_double) function gsl_ran_gamma_pdf (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.131 gsl_ran_gaussian()

```
real(c_double) function gsl_ran_gaussian (  
    type(c_ptr), value r,  
    real(c_double), value sigma )
```

49.64.1.132 gsl_ran_gaussian_pdf()

```
real(c_double) function gsl_ran_gaussian_pdf (  
    real(c_double), value x,  
    real(c_double), value sigma )
```

49.64.1.133 gsl_ran_gaussian_ratio_method()

```
real(c_double) function gsl_ran_gaussian_ratio_method (  
    type(c_ptr), value r,  
    real(c_double), value sigma )
```

49.64.1.134 gsl_ran_gaussian_tail()

```
real(c_double) function gsl_ran_gaussian_tail (  
    type(c_ptr), value r,  
    real(c_double), value a,  
    real(c_double), value sigma )
```

49.64.1.135 gsl_ran_gaussian_tail_pdf()

```
real(c_double) function gsl_ran_gaussian_tail_pdf (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value sigma )
```

49.64.1.136 gsl_ran_gaussian_ziggurat()

```
real(c_double) function gsl_ran_gaussian_ziggurat (  
    type(c_ptr), value r,  
    real(c_double), value sigma )
```

49.64.1.137 gsl_ran_geometric()

```
integer(c_int) function gsl_ran_geometric (  
    type(c_ptr), value r,  
    real(c_double), value p )
```

49.64.1.138 gsl_ran_geometric_pdf()

```
real(c_double) function gsl_ran_geometric_pdf (  
    integer(c_int), value k,  
    real(c_double), value p )
```


49.64.1.139 gsl_ran_gumbel1()

```
real(c_double) function gsl_ran_gumbel1 (  
    type(c_ptr), value r,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.140 gsl_ran_gumbel1_pdf()

```
real(c_double) function gsl_ran_gumbel1_pdf (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.141 gsl_ran_gumbel2()

```
real(c_double) function gsl_ran_gumbel2 (  
    type(c_ptr), value r,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.142 gsl_ran_gumbel2_pdf()

```
real(c_double) function gsl_ran_gumbel2_pdf (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.143 gsl_ran_hypergeometric()

```
integer(c_int) function gsl_ran_hypergeometric (  
    type(c_ptr), value r,  
    integer(c_int), value n1,  
    integer(c_int), value n2,  
    integer(c_int), value t )
```

49.64.1.144 gsl_ran_hypergeometric_pdf()

```
real(c_double) function gsl_ran_hypergeometric_pdf (
    integer(c_int), value k,
    integer(c_int), value n1,
    integer(c_int), value n2,
    integer(c_int), value t )
```

49.64.1.145 gsl_ran_landau()

```
real(c_double) function gsl_ran_landau (
    type(c_ptr), value r )
```

49.64.1.146 gsl_ran_landau_pdf()

```
real(c_double) function gsl_ran_landau_pdf (
    real(c_double), value x )
```

49.64.1.147 gsl_ran_laplace()

```
real(c_double) function gsl_ran_laplace (
    type(c_ptr), value r,
    real(c_double), value a )
```

49.64.1.148 gsl_ran_laplace_pdf()

```
real(c_double) function gsl_ran_laplace_pdf (
    real(c_double), value x,
    real(c_double), value a )
```

49.64.1.149 gsl_ran_levy()

```
real(c_double) function gsl_ran_levy (
    type(c_ptr), value r,
    real(c_double), value c,
    real(c_double), value alpha )
```

49.64.1.150 gsl_ran_levy_skew()

```
real(c_double) function gsl_ran_levy_skew (  
    type(c_ptr), value r,  
    real(c_double), value c,  
    real(c_double), value alpha,  
    real(c_double), value beta )
```

49.64.1.151 gsl_ran_logarithmic()

```
integer(c_int) function gsl_ran_logarithmic (  
    type(c_ptr), value r,  
    real(c_double), value p )
```

49.64.1.152 gsl_ran_logarithmic_pdf()

```
real(c_double) function gsl_ran_logarithmic_pdf (  
    integer(c_int), value k,  
    real(c_double), value p )
```

49.64.1.153 gsl_ran_logistic()

```
real(c_double) function gsl_ran_logistic (  
    type(c_ptr), value r,  
    real(c_double), value a )
```

49.64.1.154 gsl_ran_logistic_pdf()

```
real(c_double) function gsl_ran_logistic_pdf (  
    real(c_double), value x,  
    real(c_double), value a )
```

49.64.1.155 gsl_ran_lognormal()

```
real(c_double) function gsl_ran_lognormal (  
    type(c_ptr), value r,  
    real(c_double), value zeta,  
    real(c_double), value sigma )
```

49.64.1.156 gsl_ran_lognormal_pdf()

```
real(c_double) function gsl_ran_lognormal_pdf (  
    real(c_double), value x,  
    real(c_double), value zeta,  
    real(c_double), value sigma )
```

49.64.1.157 gsl_ran_multinomial()

```
subroutine gsl_ran_multinomial (  
    type(c_ptr), value r,  
    integer(c_size_t), value k,  
    integer(c_int), value nn,  
    type(c_ptr), value p,  
    type(c_ptr), value n )
```

49.64.1.158 gsl_ran_multinomial_lnpdf()

```
real(c_double) function gsl_ran_multinomial_lnpdf (  
    integer(c_size_t), value k,  
    type(c_ptr), value p,  
    type(c_ptr), value n )
```

49.64.1.159 gsl_ran_multinomial_pdf()

```
real(c_double) function gsl_ran_multinomial_pdf (  
    integer(c_size_t), value k,  
    type(c_ptr), value p,  
    type(c_ptr), value n )
```

49.64.1.160 gsl_ran_multivariate_gaussian()

```
integer(c_int) function gsl_ran_multivariate_gaussian (  
    type(c_ptr), value r,  
    type(c_ptr), value mu,  
    type(c_ptr), value l,  
    type(c_ptr), value result )
```

49.64.1.161 gsl_ran_multivariate_gaussian_log_pdf()

```
integer(c_int) function gsl_ran_multivariate_gaussian_log_pdf (  
    type(c_ptr), value x,  
    type(c_ptr), value mu,  
    type(c_ptr), value l,  
    real(fgsl_double) result,  
    type(c_ptr), value work )
```

49.64.1.162 gsl_ran_multivariate_gaussian_mean()

```
integer(c_int) function gsl_ran_multivariate_gaussian_mean (  
    type(c_ptr), value x,  
    type(c_ptr), value mu_hat )
```

49.64.1.163 gsl_ran_multivariate_gaussian_pdf()

```
integer(c_int) function gsl_ran_multivariate_gaussian_pdf (  
    type(c_ptr), value x,  
    type(c_ptr), value mu,  
    type(c_ptr), value l,  
    real(fgsl_double) result,  
    type(c_ptr), value work )
```

49.64.1.164 gsl_ran_multivariate_gaussian_vcov()

```
integer(c_int) function gsl_ran_multivariate_gaussian_vcov (  
    type(c_ptr), value x,  
    type(c_ptr), value sigma_hat )
```

49.64.1.165 gsl_ran_negative_binomial()

```
integer(c_int) function gsl_ran_negative_binomial (  
    type(c_ptr), value r,  
    real(c_double), value p,  
    real(c_double), value n )
```

49.64.1.166 gsl_ran_negative_binomial_pdf()

```
real(c_double) function gsl_ran_negative_binomial_pdf (
    integer(c_int), value k,
    real(c_double), value p,
    real(c_double), value n )
```

49.64.1.167 gsl_ran_pareto()

```
real(c_double) function gsl_ran_pareto (
    type(c_ptr), value r,
    real(c_double), value a,
    real(c_double), value b )
```

49.64.1.168 gsl_ran_pareto_pdf()

```
real(c_double) function gsl_ran_pareto_pdf (
    real(c_double), value x,
    real(c_double), value a,
    real(c_double), value b )
```

49.64.1.169 gsl_ran_pascal()

```
integer(c_int) function gsl_ran_pascal (
    type(c_ptr), value r,
    real(c_double), value p,
    real(c_double), value n )
```

49.64.1.170 gsl_ran_pascal_pdf()

```
real(c_double) function gsl_ran_pascal_pdf (
    integer(c_int), value k,
    real(c_double), value p,
    real(c_double), value n )
```

49.64.1.171 gsl_ran_poisson()

```
integer(c_int) function gsl_ran_poisson (
    type(c_ptr), value r,
    real(c_double), value mu )
```

49.64.1.172 gsl_ran_poisson_pdf()

```
real(c_double) function gsl_ran_poisson_pdf (
    integer(c_int), value k,
    real(c_double), value mu )
```

49.64.1.173 gsl_ran_rayleigh()

```
real(c_double) function gsl_ran_rayleigh (
    type(c_ptr), value r,
    real(c_double), value sigma )
```

49.64.1.174 gsl_ran_rayleigh_pdf()

```
real(c_double) function gsl_ran_rayleigh_pdf (
    real(c_double), value x,
    real(c_double), value sigma )
```

49.64.1.175 gsl_ran_rayleigh_tail()

```
real(c_double) function gsl_ran_rayleigh_tail (
    type(c_ptr), value r,
    real(c_double), value a,
    real(c_double), value sigma )
```

49.64.1.176 gsl_ran_rayleigh_tail_pdf()

```
real(c_double) function gsl_ran_rayleigh_tail_pdf (
    real(c_double), value x,
    real(c_double), value a,
    real(c_double), value sigma )
```

49.64.1.177 gsl_ran_sample()

```
subroutine gsl_ran_sample (
    type(c_ptr), value r,
    type(c_ptr), value dest,
    integer(c_size_t), value k,
    type(c_ptr), value src,
    integer(c_size_t), value n,
    integer(c_size_t), value size )
```

49.64.1.178 gsl_ran_shuffle()

```
subroutine gsl_ran_shuffle (
    type(c_ptr), value r,
    type(c_ptr), value base,
    integer(c_size_t), value n,
    integer(c_size_t), value size )
```

49.64.1.179 gsl_ran_tdist()

```
real(c_double) function gsl_ran_tdist (
    type(c_ptr), value r,
    real(c_double), value nu )
```

49.64.1.180 gsl_ran_tdist_pdf()

```
real(c_double) function gsl_ran_tdist_pdf (
    real(c_double), value x,
    real(c_double), value nu )
```

49.64.1.181 gsl_ran_ugaussian()

```
real(c_double) function gsl_ran_ugaussian (
    type(c_ptr), value r )
```

49.64.1.182 gsl_ran_ugaussian_pdf()

```
real(c_double) function gsl_ran_ugaussian_pdf (
    real(c_double), value x )
```

49.64.1.183 gsl_ran_ugaussian_ratio_method()

```
real(c_double) function gsl_ran_ugaussian_ratio_method (
    type(c_ptr), value r )
```


49.64.1.184 gsl_ran_ugaussian_tail()

```
real(c_double) function gsl_ran_ugaussian_tail (  
    type(c_ptr), value r,  
    real(c_double), value a )
```

49.64.1.185 gsl_ran_ugaussian_tail_pdf()

```
real(c_double) function gsl_ran_ugaussian_tail_pdf (  
    real(c_double), value x,  
    real(c_double), value a )
```

49.64.1.186 gsl_ran_weibull()

```
real(c_double) function gsl_ran_weibull (  
    type(c_ptr), value r,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.187 gsl_ran_weibull_pdf()

```
real(c_double) function gsl_ran_weibull_pdf (  
    real(c_double), value x,  
    real(c_double), value a,  
    real(c_double), value b )
```

49.64.1.188 gsl_ran_wishart()

```
integer(c_int) function gsl_ran_wishart (  
    type(c_ptr), value r,  
    real(c_double), value df,  
    type(c_ptr), value l,  
    type(c_ptr), value result,  
    type(c_ptr), value work )
```

49.64.1.189 gsl_ran_wishart_log_pdf()

```
integer(c_int) function gsl_ran_wishart_log_pdf (  
    type(c_ptr), value x,  
    type(c_ptr), value l_x,  
    real(c_double), value df,  
    type(c_ptr), value l,  
    real(c_double), intent(inout) result,  
    type(c_ptr), value work )
```

49.64.1.190 gsl_ran_wishart_pdf()

```
integer(c_int) function gsl_ran_wishart_pdf (  
    type(c_ptr), value x,  
    type(c_ptr), value l_x,  
    real(c_double), value df,  
    type(c_ptr), value l,  
    real(c_double), intent(inout) result,  
    type(c_ptr), value work )
```

49.64.1.191 gsl_rng_alloc()

```
type(c_ptr) function gsl_rng_alloc (  
    type(c_ptr), value t )
```

49.64.1.192 gsl_rng_clone()

```
type(c_ptr) function gsl_rng_clone (  
    type(c_ptr), value r )
```

49.64.1.193 gsl_rng_env_setup()

```
type(c_ptr) function gsl_rng_env_setup
```

49.64.1.194 gsl_rng_fread()

```
integer(c_int) function gsl_rng_fread (  
    type(c_ptr), value stream,  
    type(c_ptr), value r )
```

49.64.1.195 gsl_rng_free()

```
subroutine gsl_rng_free (  
    type(c_ptr), value r )
```

49.64.1.196 gsl_rng_fwrite()

```
integer(c_int) function gsl_rng_fwrite (  
    type(c_ptr), value stream,  
    type(c_ptr), value r )
```

49.64.1.197 gsl_rng_get()

```
integer(c_long) function gsl_rng_get (  
    type(c_ptr), value r )
```

49.64.1.198 gsl_rng_max()

```
integer(c_long) function gsl_rng_max (  
    type(c_ptr), value r )
```

49.64.1.199 gsl_rng_memcpy()

```
integer(c_int) function gsl_rng_memcpy (  
    type(c_ptr), value cpy,  
    type(c_ptr), value src )
```

49.64.1.200 gsl_rng_min()

```
integer(c_long) function gsl_rng_min (  
    type(c_ptr), value r )
```

49.64.1.201 gsl_rng_name()

```
type(c_ptr) function gsl_rng_name (  
    type(c_ptr), value r )
```

49.64.1.202 gsl_rng_set()

```
subroutine gsl_rng_set (
    type(c_ptr), value r,
    integer(c_long), value s )
```

49.64.1.203 gsl_rng_uniform()

```
real(c_double) function gsl_rng_uniform (
    type(c_ptr), value r )
```

49.64.1.204 gsl_rng_uniform_int()

```
integer(c_long) function gsl_rng_uniform_int (
    type(c_ptr), value r,
    integer(c_long), value n )
```

49.64.1.205 gsl_rng_uniform_pos()

```
real(c_double) function gsl_rng_uniform_pos (
    type(c_ptr), value r )
```

49.65 api/roots.finc File Reference**Functions/Subroutines**

- type(fgsl_root_fsolver) function [fgsl_root_fsolver_alloc](#) (t)
- type(fgsl_root_fdfsolver) function [fgsl_root_fdfsolver_alloc](#) (t)
- integer(fgsl_int) function [fgsl_root_fsolver_set](#) (s, f, x_lower, x_upper)
- integer(fgsl_int) function [fgsl_root_fdfsolver_set](#) (s, fdf, x)
- subroutine [fgsl_root_fsolver_free](#) (s)
- subroutine [fgsl_root_fdfsolver_free](#) (s)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_root_fsolver_name](#) (s)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_root_fdfsolver_name](#) (s)
- integer(fgsl_int) function [fgsl_root_fsolver_iterate](#) (s)
- integer(fgsl_int) function [fgsl_root_fdfsolver_iterate](#) (s)
- real(fgsl_double) function [fgsl_root_fsolver_root](#) (s)
- real(fgsl_double) function [fgsl_root_fdfsolver_root](#) (s)
- real(fgsl_double) function [fgsl_root_fsolver_x_lower](#) (s)
- real(fgsl_double) function [fgsl_root_fsolver_x_upper](#) (s)
- integer(fgsl_int) function [fgsl_root_test_interval](#) (x_lower, x_upper, epsabs, epsrel)
- integer(fgsl_int) function [fgsl_root_test_delta](#) (x1, x0, epsabs, epsrel)
- integer(fgsl_int) function [fgsl_root_test_residual](#) (f, epsabs)
- logical function [fgsl_root_fsolver_status](#) (s)
- logical function [fgsl_root_fdfsolver_status](#) (s)

49.65.1 Function/Subroutine Documentation

49.65.1.1 fgsl_root_fdfsolver_alloc()

```
type(fgsl_root_fdfsolver) function fgsl_root_fdfsolver_alloc (  
    type(fgsl_root_fdfsolver_type), intent(in) t )
```

49.65.1.2 fgsl_root_fdfsolver_free()

```
subroutine fgsl_root_fdfsolver_free (  
    type(fgsl_root_fdfsolver), intent(inout) s )
```

49.65.1.3 fgsl_root_fdfsolver_iterate()

```
integer(fgsl_int) function fgsl_root_fdfsolver_iterate (  
    type(fgsl_root_fdfsolver), intent(inout) s )
```

49.65.1.4 fgsl_root_fdfsolver_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_root_fdfsolver_name (  
    type(fgsl_root_fdfsolver), intent(in) s )
```

49.65.1.5 fgsl_root_fdfsolver_root()

```
real(fgsl_double) function fgsl_root_fdfsolver_root (  
    type(fgsl_root_fdfsolver), intent(inout) s )
```

49.65.1.6 fgsl_root_fdfsolver_set()

```
integer(fgsl_int) function fgsl_root_fdfsolver_set (  
    type(fgsl_root_fdfsolver), intent(in) s,  
    type(fgsl_function_fdf), intent(in) fdf,  
    real(fgsl_double), intent(in) x )
```

49.65.1.7 fgsl_root_fdfsolver_status()

```
logical function fgsl_root_fdfsolver_status (  
    type(fgsl_root_fdfsolver), intent(in) s )
```

49.65.1.8 fgsl_root_fsolver_alloc()

```
type(fgsl_root_fsolver) function fgsl_root_fsolver_alloc (  
    type(fgsl_root_fsolver_type), intent(in) t )
```

49.65.1.9 fgsl_root_fsolver_free()

```
subroutine fgsl_root_fsolver_free (  
    type(fgsl_root_fsolver), intent(inout) s )
```

49.65.1.10 fgsl_root_fsolver_iterate()

```
integer(fgsl_int) function fgsl_root_fsolver_iterate (  
    type(fgsl_root_fsolver), intent(inout) s )
```

49.65.1.11 fgsl_root_fsolver_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_root_fsolver_name (  
    type(fgsl_root_fsolver), intent(in) s )
```

49.65.1.12 fgsl_root_fsolver_root()

```
real(fgsl_double) function fgsl_root_fsolver_root (  
    type(fgsl_root_fsolver), intent(inout) s )
```

49.65.1.13 fgsl_root_fsolver_set()

```
integer(fgsl_int) function fgsl_root_fsolver_set (  
    type(fgsl_root_fsolver), intent(in) s,  
    type(fgsl_function), intent(in) f,  
    real(fgsl_double), intent(in) x_lower,  
    real(fgsl_double), intent(in) x_upper )
```

49.65.1.14 fgsl_root_fsolver_status()

```
logical function fgsl_root_fsolver_status (  
    type(fgsl_root_fsolver), intent(in) s )
```

49.65.1.15 fgsl_root_fsolver_x_lower()

```
real(fgsl_double) function fgsl_root_fsolver_x_lower (  
    type(fgsl_root_fsolver), intent(inout) s )
```

49.65.1.16 fgsl_root_fsolver_x_upper()

```
real(fgsl_double) function fgsl_root_fsolver_x_upper (  
    type(fgsl_root_fsolver), intent(inout) s )
```

49.65.1.17 fgsl_root_test_delta()

```
integer(fgsl_int) function fgsl_root_test_delta (  
    real(fgsl_double), intent(in) x1,  
    real(fgsl_double), intent(in) x0,  
    real(fgsl_double), intent(in) epsabs,  
    real(fgsl_double), intent(in) epsrel )
```

49.65.1.18 fgsl_root_test_interval()

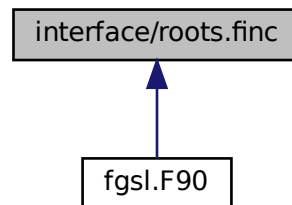
```
integer(fgsl_int) function fgsl_root_test_interval (  
    real(fgsl_double), intent(in) x_lower,  
    real(fgsl_double), intent(in) x_upper,  
    real(fgsl_double), intent(in) epsabs,  
    real(fgsl_double), intent(in) epsrel )
```

49.65.1.19 fgsl_root_test_residual()

```
integer(fgsl_int) function fgsl_root_test_residual (  
    real(fgsl_double), intent(in) f,  
    real(fgsl_double), intent(in) epsabs )
```

49.66 interface/roots.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_root_fsolver_alloc](#) (t)
- type(c_ptr) function [fgsl_aux_fsolver_alloc](#) (it)
- type(c_ptr) function [gsl_root_fdfsolver_alloc](#) (t)
- type(c_ptr) function [fgsl_aux_fdfsolver_alloc](#) (it)
- integer(c_int) function [gsl_root_fsolver_set](#) (s, f, x_lower, x_upper)
- integer(c_int) function [gsl_root_fdfsolver_set](#) (s, f, x)
- subroutine [gsl_root_fsolver_free](#) (s)
- subroutine [gsl_root_fdfsolver_free](#) (s)
- type(c_ptr) function [gsl_root_fsolver_name](#) (s)
- type(c_ptr) function [gsl_root_fdfsolver_name](#) (s)
- integer(c_int) function [gsl_root_fsolver_iterate](#) (s)
- integer(c_int) function [gsl_root_fdfsolver_iterate](#) (s)
- real(c_double) function [gsl_root_fsolver_root](#) (s)
- real(c_double) function [gsl_root_fdfsolver_root](#) (s)
- real(c_double) function [gsl_root_fsolver_x_lower](#) (s)
- real(c_double) function [gsl_root_fsolver_x_upper](#) (s)
- integer(c_int) function [gsl_root_test_interval](#) (x_lower, x_upper, epsabs, epsrel)
- integer(c_int) function [gsl_root_test_delta](#) (x1, x0, epsabs, epsrel)
- integer(c_int) function [gsl_root_test_residual](#) (f, epsabs)

49.66.1 Function/Subroutine Documentation

49.66.1.1 fgsl_aux_fdfsolver_alloc()

```

type(c_ptr) function fgsl_aux_fdfsolver_alloc (
    integer(c_int), value it )
  
```


49.66.1.2 fgsl_aux_fsolver_alloc()

```
type(c_ptr) function fgsl_aux_fsolver_alloc (
    integer(c_int), value it )
```

49.66.1.3 gsl_root_fdfsolver_alloc()

```
type(c_ptr) function gsl_root_fdfsolver_alloc (
    type(c_ptr), value t )
```

49.66.1.4 gsl_root_fdfsolver_free()

```
subroutine gsl_root_fdfsolver_free (
    type(c_ptr), value s )
```

49.66.1.5 gsl_root_fdfsolver_iterate()

```
integer(c_int) function gsl_root_fdfsolver_iterate (
    type(c_ptr), value s )
```

49.66.1.6 gsl_root_fdfsolver_name()

```
type(c_ptr) function gsl_root_fdfsolver_name (
    type(c_ptr), value s )
```

49.66.1.7 gsl_root_fdfsolver_root()

```
real(c_double) function gsl_root_fdfsolver_root (
    type(c_ptr), value s )
```

49.66.1.8 gsl_root_fdfsolver_set()

```
integer(c_int) function gsl_root_fdfsolver_set (
    type(c_ptr), value s,
    type(c_ptr), value f,
    real(c_double), value x )
```

49.66.1.9 gsl_root_fsolver_alloc()

```
type(c_ptr) function gsl_root_fsolver_alloc (  
    type(c_ptr), value t )
```

49.66.1.10 gsl_root_fsolver_free()

```
subroutine gsl_root_fsolver_free (  
    type(c_ptr), value s )
```

49.66.1.11 gsl_root_fsolver_iterate()

```
integer(c_int) function gsl_root_fsolver_iterate (  
    type(c_ptr), value s )
```

49.66.1.12 gsl_root_fsolver_name()

```
type(c_ptr) function gsl_root_fsolver_name (  
    type(c_ptr), value s )
```

49.66.1.13 gsl_root_fsolver_root()

```
real(c_double) function gsl_root_fsolver_root (  
    type(c_ptr), value s )
```

49.66.1.14 gsl_root_fsolver_set()

```
integer(c_int) function gsl_root_fsolver_set (  
    type(c_ptr), value s,  
    type(c_ptr), value f,  
    real(c_double), value x_lower,  
    real(c_double), value x_upper )
```

49.66.1.15 gsl_root_fsolver_x_lower()

```
real(c_double) function gsl_root_fsolver_x_lower (  
    type(c_ptr), value s )
```

49.66.1.16 gsl_root_fsolver_x_upper()

```
real(c_double) function gsl_root_fsolver_x_upper (  
    type(c_ptr), value s )
```

49.66.1.17 gsl_root_test_delta()

```
integer(c_int) function gsl_root_test_delta (  
    real(c_double), value x1,  
    real(c_double), value x0,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel )
```

49.66.1.18 gsl_root_test_interval()

```
integer(c_int) function gsl_root_test_interval (  
    real(c_double), value x_lower,  
    real(c_double), value x_upper,  
    real(c_double), value epsabs,  
    real(c_double), value epsrel )
```

49.66.1.19 gsl_root_test_residual()

```
integer(c_int) function gsl_root_test_residual (  
    real(c_double), value f,  
    real(c_double), value epsabs )
```

49.67 api/rstat.finc File Reference

Functions/Subroutines

- type(fgsl_rstat_quantile_workspace) function [fgsl_rstat_quantile_alloc](#) (p)
- subroutine [fgsl_rstat_quantile_free](#) (w)
- integer(fgsl_int) function [fgsl_rstat_quantile_reset](#) (w)
- integer(fgsl_int) function [fgsl_rstat_quantile_add](#) (x, w)
- real(fgsl_double) function [fgsl_rstat_quantile_get](#) (w)
- type(fgsl_rstat_workspace) function [fgsl_rstat_alloc](#) ()
- subroutine [fgsl_rstat_free](#) (w)
- integer(fgsl_size_t) function [fgsl_rstat_n](#) (w)
- integer(fgsl_int) function [fgsl_rstat_add](#) (x, w)
- real(fgsl_double) function [fgsl_rstat_min](#) (w)
- real(fgsl_double) function [fgsl_rstat_max](#) (w)
- real(fgsl_double) function [fgsl_rstat_mean](#) (w)
- real(fgsl_double) function [fgsl_rstat_rms](#) (w)
- real(fgsl_double) function [fgsl_rstat_variance](#) (w)
- real(fgsl_double) function [fgsl_rstat_sd](#) (w)
- real(fgsl_double) function [fgsl_rstat_sd_mean](#) (w)
- real(fgsl_double) function [fgsl_rstat_median](#) (w)
- real(fgsl_double) function [fgsl_rstat_skew](#) (w)
- real(fgsl_double) function [fgsl_rstat_kurtosis](#) (w)
- integer(fgsl_int) function [fgsl_rstat_reset](#) (w)

49.67.1 Function/Subroutine Documentation

49.67.1.1 fgsl_rstat_add()

```
integer(fgsl_int) function fgsl_rstat_add (
    real(fgsl_double), value x,
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.2 fgsl_rstat_alloc()

```
type(fgsl_rstat_workspace) function fgsl_rstat_alloc
```

49.67.1.3 fgsl_rstat_free()

```
subroutine fgsl_rstat_free (
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.4 fgsl_rstat_kurtosis()

```
real(fgsl_double) function fgsl_rstat_kurtosis (  
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.5 fgsl_rstat_max()

```
real(fgsl_double) function fgsl_rstat_max (  
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.6 fgsl_rstat_mean()

```
real(fgsl_double) function fgsl_rstat_mean (  
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.7 fgsl_rstat_median()

```
real(fgsl_double) function fgsl_rstat_median (  
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.8 fgsl_rstat_min()

```
real(fgsl_double) function fgsl_rstat_min (  
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.9 fgsl_rstat_n()

```
integer(fgsl_size_t) function fgsl_rstat_n (  
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.10 fgsl_rstat_quantile_add()

```
integer(fgsl_int) function fgsl_rstat_quantile_add (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_rstat_quantile_workspace), intent(inout) w )
```

49.67.1.11 fgsl_rstat_quantile_alloc()

```
type(fgsl_rstat_quantile_workspace) function fgsl_rstat_quantile_alloc (
    real(fgsl_double), intent(in) p )
```

49.67.1.12 fgsl_rstat_quantile_free()

```
subroutine fgsl_rstat_quantile_free (
    type(fgsl_rstat_quantile_workspace), intent(inout) w )
```

49.67.1.13 fgsl_rstat_quantile_get()

```
real(fgsl_double) function fgsl_rstat_quantile_get (
    type(fgsl_rstat_quantile_workspace), intent(inout) w )
```

49.67.1.14 fgsl_rstat_quantile_reset()

```
integer(fgsl_int) function fgsl_rstat_quantile_reset (
    type(fgsl_rstat_quantile_workspace), intent(inout) w )
```

49.67.1.15 fgsl_rstat_reset()

```
integer(fgsl_int) function fgsl_rstat_reset (
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.16 fgsl_rstat_rms()

```
real(fgsl_double) function fgsl_rstat_rms (
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.17 fgsl_rstat_sd()

```
real(fgsl_double) function fgsl_rstat_sd (
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.18 fgsl_rstat_sd_mean()

```
real(fgsl_double) function fgsl_rstat_sd_mean (  
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.19 fgsl_rstat_skew()

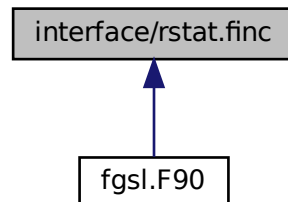
```
real(fgsl_double) function fgsl_rstat_skew (  
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.67.1.20 fgsl_rstat_variance()

```
real(fgsl_double) function fgsl_rstat_variance (  
    type(fgsl_rstat_workspace), intent(inout) w )
```

49.68 interface/rstat.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_rstat_quantile_alloc](#) (p)
- integer(c_int) function [gsl_rstat_quantile_reset](#) (w)
- subroutine [gsl_rstat_quantile_free](#) (w)
- integer(c_int) function [gsl_rstat_quantile_add](#) (x, w)
- real(c_double) function [gsl_rstat_quantile_get](#) (w)
- type(c_ptr) function [gsl_rstat_alloc](#) ()
- subroutine [gsl_rstat_free](#) (w)
- integer(c_size_t) function [gsl_rstat_n](#) (w)
- integer(c_int) function [gsl_rstat_add](#) (x, w)
- real(c_double) function [gsl_rstat_min](#) (w)

- real(c_double) function [gsl_rstat_max](#) (w)
- real(c_double) function [gsl_rstat_mean](#) (w)
- real(c_double) function [gsl_rstat_rms](#) (w)
- real(c_double) function [gsl_rstat_variance](#) (w)
- real(c_double) function [gsl_rstat_sd](#) (w)
- real(c_double) function [gsl_rstat_sd_mean](#) (w)
- real(c_double) function [gsl_rstat_median](#) (w)
- real(c_double) function [gsl_rstat_skew](#) (w)
- real(c_double) function [gsl_rstat_kurtosis](#) (w)
- integer(c_int) function [gsl_rstat_reset](#) (w)

49.68.1 Function/Subroutine Documentation

49.68.1.1 [gsl_rstat_add\(\)](#)

```
integer(c_int) function gsl_rstat_add (  
    real(c_double), value x,  
    type(c_ptr), value w )
```

49.68.1.2 [gsl_rstat_alloc\(\)](#)

```
type(c_ptr) function gsl_rstat_alloc
```

49.68.1.3 [gsl_rstat_free\(\)](#)

```
subroutine gsl_rstat_free (  
    type(c_ptr), value w )
```

49.68.1.4 [gsl_rstat_kurtosis\(\)](#)

```
real(c_double) function gsl_rstat_kurtosis (  
    type(c_ptr), value w )
```

49.68.1.5 [gsl_rstat_max\(\)](#)

```
real(c_double) function gsl_rstat_max (  
    type(c_ptr), value w )
```


49.68.1.6 gsl_rstat_mean()

```
real(c_double) function gsl_rstat_mean (  
    type(c_ptr), value w )
```

49.68.1.7 gsl_rstat_median()

```
real(c_double) function gsl_rstat_median (  
    type(c_ptr), value w )
```

49.68.1.8 gsl_rstat_min()

```
real(c_double) function gsl_rstat_min (  
    type(c_ptr), value w )
```

49.68.1.9 gsl_rstat_n()

```
integer(c_size_t) function gsl_rstat_n (  
    type(c_ptr), value w )
```

49.68.1.10 gsl_rstat_quantile_add()

```
integer(c_int) function gsl_rstat_quantile_add (  
    real(c_double), value x,  
    type(c_ptr), value w )
```

49.68.1.11 gsl_rstat_quantile_alloc()

```
type(c_ptr) function gsl_rstat_quantile_alloc (  
    real(c_double), value p )
```

49.68.1.12 gsl_rstat_quantile_free()

```
subroutine gsl_rstat_quantile_free (  
    type(c_ptr), value w )
```

49.68.1.13 gsl_rstat_quantile_get()

```
real(c_double) function gsl_rstat_quantile_get (  
    type(c_ptr), value w )
```

49.68.1.14 gsl_rstat_quantile_reset()

```
integer(c_int) function gsl_rstat_quantile_reset (  
    type(c_ptr), value w )
```

49.68.1.15 gsl_rstat_reset()

```
integer(c_int) function gsl_rstat_reset (  
    type(c_ptr), value w )
```

49.68.1.16 gsl_rstat_rms()

```
real(c_double) function gsl_rstat_rms (  
    type(c_ptr), value w )
```

49.68.1.17 gsl_rstat_sd()

```
real(c_double) function gsl_rstat_sd (  
    type(c_ptr), value w )
```

49.68.1.18 gsl_rstat_sd_mean()

```
real(c_double) function gsl_rstat_sd_mean (  
    type(c_ptr), value w )
```

49.68.1.19 gsl_rstat_skew()

```
real(c_double) function gsl_rstat_skew (  
    type(c_ptr), value w )
```

49.68.1.20 gsl_rstat_variance()

```
real(c_double) function gsl_rstat_variance (
    type(c_ptr), value w )
```

49.69 api/siman.finc File Reference**Functions/Subroutines**

- subroutine [fgsl_siman_params_init](#) (params, n_tries, iters_fixed_t, step_size, k, t_initial, mu_t, t_min)
- subroutine [fgsl_siman_params_free](#) (params)
- subroutine [fgsl_siman_solve](#) (rng, x0_p, ef, take_step, distance, print_position, copy_func, copy_constructor, destructor, element_size, params)
- logical function [fgsl_siman_params_t_status](#) (siman_params_t)

49.69.1 Function/Subroutine Documentation**49.69.1.1 fgsl_siman_params_free()**

```
subroutine fgsl_siman_params_free (
    type(fgsl_siman_params_t), intent(inout) params )
```

49.69.1.2 fgsl_siman_params_init()

```
subroutine fgsl_siman_params_init (
    type(fgsl_siman_params_t), intent(inout) params,
    integer(fgsl_int) n_tries,
    integer(fgsl_int) iters_fixed_t,
    real(fgsl_double) step_size,
    real(fgsl_double) k,
    real(fgsl_double) t_initial,
    real(fgsl_double) mu_t,
    real(fgsl_double) t_min )
```

49.69.1.3 fgsl_siman_params_t_status()

```
logical function fgsl_siman_params_t_status (
    type(fgsl_siman_params_t), intent(in) siman_params_t )
```

49.69.1.4 fgsl_siman_solve()

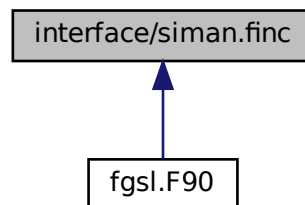
```

subroutine fgsl_siman_solve (
    type(fgsl_rng), intent(in) rng,
    type(c_ptr), intent(inout) x0_p,
    ef,
    take_step,
    distance,
    optional print_position,
    optional copy_func,
    optional copy_constructor,
    optional destructor,
    integer(fgsl_size_t), intent(in), optional element_size,
    type(fgsl_siman_params_t), intent(in) params )

```

49.70 interface/siman.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- subroutine [fgsl_siman_solve](#) (rng, x0_p, ef, take_step, distance, print_position, copy_func, copy_constructor, destructor, element_size, params)

49.70.1 Function/Subroutine Documentation

49.70.1.1 `gsl_siman_solve()`

```

subroutine gsl_siman_solve (
    type(c_ptr), value rng,
    type(c_ptr), value x0_p,
    type(c_funptr), value ef,
    type(c_funptr), value take_step,
    type(c_funptr), value distance,
    type(c_funptr), value print_position,
    type(c_funptr), value copy_func,
    type(c_funptr), value copy_constructor,
    type(c_funptr), value destructor,
    integer(c_size_t), value element_size,
    type(gsl_siman_params_t), value params )

```

49.71 `api/sort.finc` File Reference**Functions/Subroutines**

- subroutine [fgsl_heapsort](#) (array, count, size, compare)
- integer(fgsl_int) function [fgsl_heapsort_index](#) (p, array, count, size, compare)
- subroutine [fgsl_sort_double](#) (data, stride, n)
- subroutine [fgsl_sort2_double](#) (data1, stride1, data2, stride2, n)
- subroutine [fgsl_sort_double_index](#) (p, data, stride, n)
- integer(fgsl_int) function [fgsl_sort_double_smallest](#) (dest, k, src, stride, n)
- integer(fgsl_int) function [fgsl_sort_double_smallest_index](#) (p, k, src, stride, n)
- integer(fgsl_int) function [fgsl_sort_double_largest](#) (dest, k, src, stride, n)
- integer(fgsl_int) function [fgsl_sort_double_largest_index](#) (p, k, src, stride, n)
- subroutine [fgsl_sort_long](#) (data, stride, n)
- subroutine [fgsl_sort_long_index](#) (p, data, stride, n)
- integer(fgsl_int) function [fgsl_sort_long_smallest](#) (dest, k, src, stride, n)
- integer(fgsl_int) function [fgsl_sort_long_smallest_index](#) (p, k, src, stride, n)
- integer(fgsl_int) function [fgsl_sort_long_largest](#) (dest, k, src, stride, n)
- integer(fgsl_int) function [fgsl_sort_long_largest_index](#) (p, k, src, stride, n)
- subroutine [fgsl_sort_vector](#) (v)
- subroutine [fgsl_sort_vector2](#) (v1, v2)
- subroutine [fgsl_sort_vector_index](#) (p, v, status)
- integer(fgsl_int) function [fgsl_sort_vector_smallest](#) (dest, k, v)
- integer(fgsl_int) function [fgsl_sort_vector_largest](#) (dest, k, v)
- integer(fgsl_int) function [fgsl_sort_vector_smallest_index](#) (p, k, v)
- integer(fgsl_int) function [fgsl_sort_vector_largest_index](#) (p, k, v)

49.71.1 Function/Subroutine Documentation

49.71.1.1 fgsl_heapsort()

```

subroutine fgsl_heapsort (
    type(c_ptr) array,
    integer(fgsl_size_t), intent(in) count,
    integer(fgsl_size_t), intent(in) size,
    compare )

```

49.71.1.2 fgsl_heapsort_index()

```

integer(fgsl_int) function fgsl_heapsort_index (
    integer(fgsl_size_t), dimension(count), intent(out), target p,
    type(c_ptr) array,
    integer(fgsl_size_t), intent(in) count,
    integer(fgsl_size_t), intent(in) size,
    compare )

```

49.71.1.3 fgsl_sort2_double()

```

subroutine fgsl_sort2_double (
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data1,
    integer(fgsl_size_t), intent(in) stride1,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data2,
    integer(fgsl_size_t), intent(in) stride2,
    integer(fgsl_size_t), intent(in) n )

```

49.71.1.4 fgsl_sort_double()

```

subroutine fgsl_sort_double (
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )

```

49.71.1.5 fgsl_sort_double_index()

```

subroutine fgsl_sort_double_index (
    integer(fgsl_size_t), dimension(:), intent(out), target, contiguous p,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )

```

49.71.1.6 fgsl_sort_double_largest()

```
integer(fgsl_int) function fgsl_sort_double_largest (  
    real(fgsl_double), dimension(k), intent(out), target dest,  
    integer(fgsl_size_t), intent(in) k,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous src,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.71.1.7 fgsl_sort_double_largest_index()

```
integer(fgsl_int) function fgsl_sort_double_largest_index (  
    integer(fgsl_size_t), dimension(k), intent(out), target p,  
    integer(fgsl_size_t), intent(in) k,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous src,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.71.1.8 fgsl_sort_double_smallest()

```
integer(fgsl_int) function fgsl_sort_double_smallest (  
    real(fgsl_double), dimension(k), intent(out), target dest,  
    integer(fgsl_size_t), intent(in) k,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous src,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.71.1.9 fgsl_sort_double_smallest_index()

```
integer(fgsl_int) function fgsl_sort_double_smallest_index (  
    integer(fgsl_size_t), dimension(k), intent(out), target p,  
    integer(fgsl_size_t), intent(in) k,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous src,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.71.1.10 fgsl_sort_long()

```
subroutine fgsl_sort_long (  
    integer(fgsl_long), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.71.1.11 fgsl_sort_long_index()

```
subroutine fgsl_sort_long_index (  
    integer(fgsl_size_t), dimension(:), intent(out), target, contiguous p,  
    integer(fgsl_long), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.71.1.12 fgsl_sort_long_largest()

```
integer(fgsl_int) function fgsl_sort_long_largest (  
    integer(fgsl_long), dimension(k), intent(out), target dest,  
    integer(fgsl_size_t), intent(in) k,  
    integer(fgsl_long), dimension(:), intent(in), target, contiguous src,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.71.1.13 fgsl_sort_long_largest_index()

```
integer(fgsl_int) function fgsl_sort_long_largest_index (  
    integer(fgsl_size_t), dimension(k), intent(out), target p,  
    integer(fgsl_size_t), intent(in) k,  
    integer(fgsl_long), dimension(:), intent(in), target, contiguous src,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.71.1.14 fgsl_sort_long_smallest()

```
integer(fgsl_int) function fgsl_sort_long_smallest (  
    integer(fgsl_long), dimension(k), intent(out), target dest,  
    integer(fgsl_size_t), intent(in) k,  
    integer(fgsl_long), dimension(:), intent(in), target, contiguous src,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.71.1.15 fgsl_sort_long_smallest_index()

```
integer(fgsl_int) function fgsl_sort_long_smallest_index (  
    integer(fgsl_size_t), dimension(k), intent(out), target p,  
    integer(fgsl_size_t), intent(in) k,  
    integer(fgsl_long), dimension(:), intent(in), target, contiguous src,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```


49.71.1.16 fgsl_sort_vector()

```
subroutine fgsl_sort_vector (
    type(fgsl_vector), intent(inout) v )
```

49.71.1.17 fgsl_sort_vector2()

```
subroutine fgsl_sort_vector2 (
    type(fgsl_vector), intent(inout) v1,
    type(fgsl_vector), intent(inout) v2 )
```

49.71.1.18 fgsl_sort_vector_index()

```
subroutine fgsl_sort_vector_index (
    type(fgsl_permutation), intent(inout) p,
    type(fgsl_vector), intent(in) v,
    integer(fgsl_int), optional status )
```

49.71.1.19 fgsl_sort_vector_largest()

```
integer(fgsl_int) function fgsl_sort_vector_largest (
    real(fgsl_double), dimension(k), intent(out) dest,
    integer(fgsl_size_t), intent(in) k,
    type(fgsl_vector), intent(inout) v )
```

49.71.1.20 fgsl_sort_vector_largest_index()

```
integer(fgsl_int) function fgsl_sort_vector_largest_index (
    integer(fgsl_size_t), dimension(k), intent(out) p,
    integer(fgsl_size_t), intent(in) k,
    type(fgsl_vector), intent(inout) v )
```

49.71.1.21 fgsl_sort_vector_smallest()

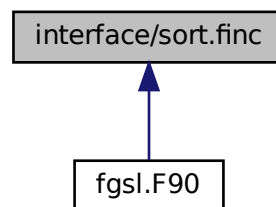
```
integer(fgsl_int) function fgsl_sort_vector_smallest (
    real(fgsl_double), dimension(k), intent(out) dest,
    integer(fgsl_size_t), intent(in) k,
    type(fgsl_vector), intent(inout) v )
```

49.71.1.22 fgsl_sort_vector_smallest_index()

```
integer(fgsl_int) function fgsl_sort_vector_smallest_index (
    integer(fgsl_size_t), dimension(k), intent(out) p,
    integer(fgsl_size_t), intent(in) k,
    type(fgsl_vector), intent(inout) v )
```

49.72 interface/sort.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- subroutine [gsl_heapsort](#) (array, count, size, compare)
- integer(c_int) function [gsl_heapsort_index](#) (p, array, count, size, compare)
- subroutine [gsl_sort](#) (data, stride, n)
- subroutine [gsl_sort2](#) (data1, stride1, data2, stride2, n)
- subroutine [gsl_sort_index](#) (p, data, stride, n)
- integer(c_int) function [gsl_sort_smallest](#) (dest, k, src, stride, n)
- integer(c_int) function [gsl_sort_smallest_index](#) (p, k, src, stride, n)
- integer(c_int) function [gsl_sort_largest](#) (dest, k, src, stride, n)
- integer(c_int) function [gsl_sort_largest_index](#) (p, k, src, stride, n)
- subroutine [gsl_sort_long](#) (data, stride, n)
- subroutine [gsl_sort_long_index](#) (p, data, stride, n)
- integer(c_int) function [gsl_sort_long_smallest](#) (dest, k, src, stride, n)
- integer(c_int) function [gsl_sort_long_smallest_index](#) (p, k, src, stride, n)
- integer(c_int) function [gsl_sort_long_largest](#) (dest, k, src, stride, n)
- integer(c_int) function [gsl_sort_long_largest_index](#) (p, k, src, stride, n)
- subroutine [gsl_sort_vector](#) (v)
- subroutine [gsl_sort_vector2](#) (v1, v2)
- integer(c_int) function [gsl_sort_vector_index](#) (p, v)
- integer(c_int) function [gsl_sort_vector_smallest](#) (dest, k, v)
- integer(c_int) function [gsl_sort_vector_largest](#) (dest, k, v)
- integer(c_int) function [gsl_sort_vector_smallest_index](#) (p, k, v)
- integer(c_int) function [gsl_sort_vector_largest_index](#) (p, k, v)

49.72.1 Function/Subroutine Documentation

49.72.1.1 `gsl_heapsort()`

```
subroutine gsl_heapsort (
    type(c_ptr), value array,
    integer(c_size_t), value count,
    integer(c_size_t), value size,
    type(c_funptr), value compare )
```

49.72.1.2 `gsl_heapsort_index()`

```
integer(c_int) function gsl_heapsort_index (
    type(c_ptr), value p,
    type(c_ptr), value array,
    integer(c_size_t), value count,
    integer(c_size_t), value size,
    type(c_funptr), value compare )
```

49.72.1.3 `gsl_sort()`

```
subroutine gsl_sort (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.72.1.4 `gsl_sort2()`

```
subroutine gsl_sort2 (
    type(c_ptr), value data1,
    integer(c_size_t), value stride1,
    type(c_ptr), value data2,
    integer(c_size_t), value stride2,
    integer(c_size_t), value n )
```

49.72.1.5 `gsl_sort_index()`

```
subroutine gsl_sort_index (
    type(c_ptr), value p,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.72.1.6 `gsl_sort_largest()`

```
integer(c_int) function gsl_sort_largest (
    type(c_ptr), value dest,
    integer(c_size_t), value k,
    type(c_ptr), value src,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.72.1.7 `gsl_sort_largest_index()`

```
integer(c_int) function gsl_sort_largest_index (
    type(c_ptr), value p,
    integer(c_size_t), value k,
    type(c_ptr), value src,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.72.1.8 `gsl_sort_long()`

```
subroutine gsl_sort_long (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.72.1.9 `gsl_sort_long_index()`

```
subroutine gsl_sort_long_index (
    type(c_ptr), value p,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.72.1.10 gsl_sort_long_largest()

```
integer(c_int) function gsl_sort_long_largest (  
    type(c_ptr), value dest,  
    integer(c_size_t), value k,  
    type(c_ptr), value src,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.72.1.11 gsl_sort_long_largest_index()

```
integer(c_int) function gsl_sort_long_largest_index (  
    type(c_ptr), value p,  
    integer(c_size_t), value k,  
    type(c_ptr), value src,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.72.1.12 gsl_sort_long_smallest()

```
integer(c_int) function gsl_sort_long_smallest (  
    type(c_ptr), value dest,  
    integer(c_size_t), value k,  
    type(c_ptr), value src,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.72.1.13 gsl_sort_long_smallest_index()

```
integer(c_int) function gsl_sort_long_smallest_index (  
    type(c_ptr), value p,  
    integer(c_size_t), value k,  
    type(c_ptr), value src,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.72.1.14 gsl_sort_smallest()

```
integer(c_int) function gsl_sort_smallest (  
    type(c_ptr), value dest,  
    integer(c_size_t), value k,  
    type(c_ptr), value src,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.72.1.15 gsl_sort_smallest_index()

```
integer(c_int) function gsl_sort_smallest_index (  
    type(c_ptr), value p,  
    integer(c_size_t), value k,  
    type(c_ptr), value src,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.72.1.16 gsl_sort_vector()

```
subroutine gsl_sort_vector (  
    type(c_ptr), value v )
```

49.72.1.17 gsl_sort_vector2()

```
subroutine gsl_sort_vector2 (  
    type(c_ptr), value v1,  
    type(c_ptr), value v2 )
```

49.72.1.18 gsl_sort_vector_index()

```
integer(c_int) function gsl_sort_vector_index (  
    type(c_ptr), value p,  
    type(c_ptr), value v )
```

49.72.1.19 gsl_sort_vector_largest()

```
integer(c_int) function gsl_sort_vector_largest (  
    real(c_double), dimension(k) dest,  
    integer(c_size_t), value k,  
    type(c_ptr), value v )
```

49.72.1.20 gsl_sort_vector_largest_index()

```
integer(c_int) function gsl_sort_vector_largest_index (  
    integer(c_size_t), dimension(k) p,  
    integer(c_size_t), value k,  
    type(c_ptr), value v )
```

49.72.1.21 gsl_sort_vector_smallest()

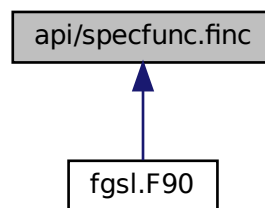
```
integer(c_int) function gsl_sort_vector_smallest (
    real(c_double), dimension(k) dest,
    integer(c_size_t), value k,
    type(c_ptr), value v )
```

49.72.1.22 gsl_sort_vector_smallest_index()

```
integer(c_int) function gsl_sort_vector_smallest_index (
    integer(c_size_t), dimension(k) p,
    integer(c_size_t), value k,
    type(c_ptr), value v )
```

49.73 api/specfunc.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- real(fgsl_double) function [fgsl_sf_airy_ai](#) (x, mode)
- integer(fgsl_int) function [fgsl_sf_airy_ai_e](#) (x, mode, result)
- real(fgsl_double) function [fgsl_sf_airy_bi](#) (x, mode)
- integer(fgsl_int) function [fgsl_sf_airy_bi_e](#) (x, mode, result)
- real(fgsl_double) function [fgsl_sf_airy_ai_scaled](#) (x, mode)
- integer(fgsl_int) function [fgsl_sf_airy_ai_scaled_e](#) (x, mode, result)
- real(fgsl_double) function [fgsl_sf_airy_bi_scaled](#) (x, mode)
- integer(fgsl_int) function [fgsl_sf_airy_bi_scaled_e](#) (x, mode, result)
- real(fgsl_double) function [fgsl_sf_airy_ai_deriv](#) (x, mode)
- integer(fgsl_int) function [fgsl_sf_airy_ai_deriv_e](#) (x, mode, result)
- real(fgsl_double) function [fgsl_sf_airy_bi_deriv](#) (x, mode)
- integer(fgsl_int) function [fgsl_sf_airy_bi_deriv_e](#) (x, mode, result)
- real(fgsl_double) function [fgsl_sf_airy_ai_deriv_scaled](#) (x, mode)
- integer(fgsl_int) function [fgsl_sf_airy_ai_deriv_scaled_e](#) (x, mode, result)

- `real(fgsl_double)` function [fgsl_sf_airy_bi_deriv_scaled](#) (x, mode)
- `integer(fgsl_int)` function [fgsl_sf_airy_bi_deriv_scaled_e](#) (x, mode, result)
- `real(fgsl_double)` function [fgsl_sf_airy_zero_ai](#) (s)
- `integer(fgsl_int)` function [fgsl_sf_airy_zero_ai_e](#) (s, result)
- `real(fgsl_double)` function [fgsl_sf_airy_zero_bi](#) (s)
- `integer(fgsl_int)` function [fgsl_sf_airy_zero_bi_e](#) (s, result)
- `real(fgsl_double)` function [fgsl_sf_airy_zero_ai_deriv](#) (s)
- `integer(fgsl_int)` function [fgsl_sf_airy_zero_ai_deriv_e](#) (s, result)
- `real(fgsl_double)` function [fgsl_sf_airy_zero_bi_deriv](#) (s)
- `integer(fgsl_int)` function [fgsl_sf_airy_zero_bi_deriv_e](#) (s, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_jc0_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_jc1_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_jcn_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_yc0_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_yc1_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ycn_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ic0_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ic1_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_icn_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ic0_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ic1_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_icn_scaled_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_kc0_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_kc1_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_kcn_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_kc0_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_kc1_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_kcn_scaled_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_js0_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_js1_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_js2_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_jsl_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ys0_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ys1_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ys2_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ysl_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_is0_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_is1_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_is2_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_isl_scaled_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ks0_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ks1_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ks2_scaled_e](#) (x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ksl_scaled_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_jnu_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_sequence_jnu_e](#) (nu, mode, v)
- `integer(fgsl_int)` function [fgsl_sf_bessel_ynu_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_inu_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_inu_scaled_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_knu_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_lnknu_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_knu_scaled_e](#) (n, x, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_zero_jc0_e](#) (s, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_zero_jc1_e](#) (s, result)
- `integer(fgsl_int)` function [fgsl_sf_bessel_zero_jnu_e](#) (nu, s, result)

- integer(fgsl_int) function [fgsl_sf_clausen_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_hydrogenicr_1_e](#) (z, r, result)
- integer(fgsl_int) function [fgsl_sf_hydrogenicr_e](#) (n, l, z, r, result)
- integer(fgsl_int) function [fgsl_sf_coulomb_wave_fg_e](#) (eta, x, l_f, k, f, fp, g, gp, exp_f, exp_g)
- integer(fgsl_int) function [fgsl_sf_coulomb_wave_f_array](#) (l_min, eta, x, fc_array, f_exponent)
- integer(fgsl_int) function [fgsl_sf_coulomb_wave_fg_array](#) (l_min, eta, x, fc_array, gc_array, f_exponent, g_exponent)
- integer(fgsl_int) function [fgsl_sf_coulomb_wave_fgp_array](#) (l_min, eta, x, fc_array, fcp_array, gc_array, gcp_array, f_exponent, g_exponent)
- integer(fgsl_int) function [fgsl_sf_coulomb_wave_sphf_array](#) (l_min, eta, x, fc_array, f_exponent)
- integer(fgsl_int) function [fgsl_sf_coulomb_cl_e](#) (l, eta, result)
- integer(fgsl_int) function [fgsl_sf_coulomb_cl_array](#) (l_min, eta, cl)
- integer(fgsl_int) function [fgsl_sf_coupling_3j_e](#) (two_ja, two_jb, two_jc, two_ma, two_mb, two_mc, result)
- integer(fgsl_int) function [fgsl_sf_coupling_6j_e](#) (two_ja, two_jb, two_jc, two_jd, two_je, two_jf, result)
- integer(fgsl_int) function [fgsl_sf_coupling_9j_e](#) (two_ja, two_jb, two_jc, two_jd, two_je, two_jf, two_jg, two_jh, two_ji, result)
- integer(fgsl_int) function [fgsl_sf_dawson_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_debye_1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_debye_2_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_debye_3_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_debye_4_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_debye_5_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_debye_6_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_dilog_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_complex_dilog_e](#) (r, theta, result_re, result_im)
- integer(fgsl_int) function [fgsl_sf_multiply_e](#) (x, y, result)
- integer(fgsl_int) function [fgsl_sf_multiply_err_e](#) (x, dx, y, dy, result)
- real(fgsl_double) function [fgsl_sf_ellint_kcomp](#) (k, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_kcomp_e](#) (k, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_ecomp](#) (k, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_ecomp_e](#) (k, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_pcomp](#) (k, n, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_pcomp_e](#) (k, n, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_f](#) (phi, k, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_f_e](#) (phi, k, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_e](#) (phi, k, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_e_e](#) (phi, k, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_p](#) (phi, k, n, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_p_e](#) (phi, k, n, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_d](#) (phi, k, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_d_e](#) (phi, k, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_rc](#) (x, y, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_rc_e](#) (x, y, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_rd](#) (x, y, z, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_rd_e](#) (x, y, z, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_rf](#) (x, y, z, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_rf_e](#) (x, y, z, mode, result)
- real(fgsl_double) function [fgsl_sf_ellint_rj](#) (x, y, z, p, mode)
- integer(fgsl_int) function [fgsl_sf_ellint_rj_e](#) (x, y, z, p, mode, result)
- integer(fgsl_int) function [fgsl_sf_erf_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_erfc_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_log_erfc_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_erf_z_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_erf_q_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_hazard_e](#) (x, result)

- integer(fgsl_int) function [fgsl_sf_exp_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_exp_e10_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_exp_mult_e](#) (x, y, result)
- integer(fgsl_int) function [fgsl_sf_exp_mult_e10_e](#) (x, y, result)
- integer(fgsl_int) function [fgsl_sf_expm1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_exprel_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_exprel_2_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_exprel_n_e](#) (n, x, result)
- integer(fgsl_int) function [fgsl_sf_exp_err_e](#) (x, dx, result)
- integer(fgsl_int) function [fgsl_sf_exp_err_e10_e](#) (x, dx, result)
- integer(fgsl_int) function [fgsl_sf_exp_mult_err_e](#) (x, dx, y, dy, result)
- integer(fgsl_int) function [fgsl_sf_exp_mult_err_e10_e](#) (x, dx, y, dy, result)
- integer(fgsl_int) function [fgsl_sf_expint_e1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_expint_e2_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_expint_en_e](#) (n, x, result)
- integer(fgsl_int) function [fgsl_sf_expint_ei_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_shi_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_chi_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_expint_3_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_si_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_ci_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_atanint_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_fermi_dirac_m1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_fermi_dirac_0_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_fermi_dirac_1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_fermi_dirac_2_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_fermi_dirac_int_e](#) (i, x, result)
- integer(fgsl_int) function [fgsl_sf_fermi_dirac_mhalf_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_fermi_dirac_half_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_fermi_dirac_3half_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_fermi_dirac_inc_0_e](#) (x, b, result)
- integer(fgsl_int) function [fgsl_sf_gamma_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_lngamma_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_lngamma_sgn_e](#) (x, result_lg, sgn)
- integer(fgsl_int) function [fgsl_sf_gammastar_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_gammainv_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_lngamma_complex_e](#) (zr, zi, lnr, arg)
- integer(fgsl_int) function [fgsl_sf_fact_e](#) (n, result)
- integer(fgsl_int) function [fgsl_sf_doublefact_e](#) (n, result)
- integer(fgsl_int) function [fgsl_sf_infact_e](#) (n, result)
- integer(fgsl_int) function [fgsl_sf_indoublefact_e](#) (n, result)
- integer(fgsl_int) function [fgsl_sf_choose_e](#) (n, m, result)
- integer(fgsl_int) function [fgsl_sf_inchoose_e](#) (n, m, result)
- integer(fgsl_int) function [fgsl_sf_taylorcoeff_e](#) (n, x, result)
- integer(fgsl_int) function [fgsl_sf_poch_e](#) (a, x, result)
- integer(fgsl_int) function [fgsl_sf_lnpoch_e](#) (a, x, result)
- integer(fgsl_int) function [fgsl_sf_lnpoch_sgn_e](#) (a, x, result_lg, sgn)
- integer(fgsl_int) function [fgsl_sf_pochrel_e](#) (a, x, result)
- integer(fgsl_int) function [fgsl_sf_gamma_inc_e](#) (a, x, result)
- integer(fgsl_int) function [fgsl_sf_gamma_inc_q_e](#) (a, x, result)
- integer(fgsl_int) function [fgsl_sf_gamma_inc_p_e](#) (a, x, result)
- integer(fgsl_int) function [fgsl_sf_beta_e](#) (a, b, result)
- integer(fgsl_int) function [fgsl_sf_lnbeta_e](#) (a, b, result)
- integer(fgsl_int) function [fgsl_sf_beta_inc_e](#) (a, b, x, result)
- integer(fgsl_int) function [fgsl_sf_gegenpoly_1_e](#) (lambda, x, result)

- integer(fgsl_int) function [fgsl_sf_gegenpoly_2_e](#) (lambda, x, result)
- integer(fgsl_int) function [fgsl_sf_gegenpoly_3_e](#) (lambda, x, result)
- integer(fgsl_int) function [fgsl_sf_gegenpoly_n_e](#) (n, lambda, x, result)
- integer(fgsl_int) function [fgsl_sf_gegenpoly_array](#) (lambda, x, result_array)
- integer(fgsl_int) function [fgsl_sf_hermite_deriv_e](#) (m, n, x, result)
- integer(fgsl_int) function [fgsl_sf_hermite_prob_e](#) (n, x, result)
- integer(fgsl_int) function [fgsl_sf_hermite_prob_deriv_e](#) (m, n, x, result)
- integer(fgsl_int) function [fgsl_sf_hermite_prob_series_e](#) (n, x, a, result)
- integer(fgsl_int) function [fgsl_sf_hermite_phys_e](#) (n, x, result)
- integer(fgsl_int) function [fgsl_sf_hermite_e](#) (n, x, result)
- integer(fgsl_int) function [fgsl_sf_hermite_zero_e](#) (n, s, result)
- integer(fgsl_int) function [fgsl_sf_hermite_prob_zero_e](#) (n, s, result)
- integer(fgsl_int) function [fgsl_sf_hermite_phys_series_e](#) (n, x, a, result)
- integer(fgsl_int) function [fgsl_sf_hermite_series_e](#) (n, x, a, result)
- integer(fgsl_int) function [fgsl_sf_hermite_func_e](#) (n, x, result)
- integer(fgsl_int) function [fgsl_sf_hermite_func_fast_e](#) (n, x, result)
- integer(fgsl_int) function [fgsl_sf_hermite_func_series_e](#) (n, x, a, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_0f1_e](#) (c, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_1f1_int_e](#) (m, n, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_1f1_e](#) (a, b, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_u_int_e](#) (m, n, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_u_int_e10_e](#) (m, n, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_u_e](#) (a, b, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_u_e10_e](#) (a, b, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_2f1_e](#) (a, b, c, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_2f1_conj_e](#) (ar, ai, c, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_2f1_renorm_e](#) (a, b, c, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_2f1_conj_renorm_e](#) (ar, ai, c, x, result)
- integer(fgsl_int) function [fgsl_sf_hyperg_2f0_e](#) (a, b, x, result)
- integer(fgsl_int) function [fgsl_sf_laguerre_1_e](#) (a, x, result)
- integer(fgsl_int) function [fgsl_sf_laguerre_2_e](#) (a, x, result)
- integer(fgsl_int) function [fgsl_sf_laguerre_3_e](#) (a, x, result)
- integer(fgsl_int) function [fgsl_sf_laguerre_n_e](#) (n, a, x, result)
- integer(fgsl_int) function [fgsl_sf_lambert_w0_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_lambert_wm1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_legendre_p1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_legendre_p2_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_legendre_p3_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_legendre_pl_e](#) (l, x, result)
- real(fgsl_double) function [fgsl_sf_legendre_pl_array](#) (x, result_array)
- real(fgsl_double) function [fgsl_sf_legendre_pl_deriv_array](#) (x, result_array, deriv_array)
- integer(fgsl_int) function [fgsl_sf_legendre_q0_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_legendre_q1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_legendre_ql_e](#) (l, x, result)
- integer(fgsl_int) function [fgsl_sf_legendre_plm_e](#) (l, m, x, result)
- integer(fgsl_int) function [fgsl_sf_legendre_sphplm_e](#) (l, m, x, result)
- integer(fgsl_int) function [fgsl_sf_conicalp_half_e](#) (lambda, x, result)
- integer(fgsl_int) function [fgsl_sf_conicalp_mhalf_e](#) (lambda, x, result)
- integer(fgsl_int) function [fgsl_sf_conicalp_0_e](#) (lambda, x, result)
- integer(fgsl_int) function [fgsl_sf_conicalp_1_e](#) (lambda, x, result)
- integer(fgsl_int) function [fgsl_sf_conicalp_sph_reg_e](#) (l, lambda, x, result)
- integer(fgsl_int) function [fgsl_sf_conicalp_cyl_reg_e](#) (l, lambda, x, result)
- integer(fgsl_int) function [fgsl_sf_legendre_h3d_0_e](#) (lambda, eta, result)
- integer(fgsl_int) function [fgsl_sf_legendre_h3d_1_e](#) (lambda, eta, result)
- integer(fgsl_int) function [fgsl_sf_legendre_h3d_e](#) (l, lambda, eta, result)

- integer(fgsl_int) function [fgsl_sf_legendre_h3d_array](#) (lambda, eta, result_array)
- integer(fgsl_int) function [fgsl_sf_log_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_log_abs_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_complex_log_e](#) (zr, zi, lnr, theta)
- integer(fgsl_int) function [fgsl_sf_log_1plusx_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_log_1plusx_mx_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_psi_int_e](#) (n, result)
- integer(fgsl_int) function [fgsl_sf_psi_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_psi_1_int_e](#) (n, result)
- integer(fgsl_int) function [fgsl_sf_psi_1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_psi_n_e](#) (m, x, result)
- integer(fgsl_int) function [fgsl_sf_psi_1piy_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_synchrotron_1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_synchrotron_2_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_transport_2_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_transport_3_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_transport_4_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_transport_5_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_hypot_e](#) (x, y, result)
- integer(fgsl_int) function [fgsl_sf_sinc_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_complex_sin_e](#) (zr, zi, szr, szj)
- integer(fgsl_int) function [fgsl_sf_complex_cos_e](#) (zr, zi, czr, czi)
- integer(fgsl_int) function [fgsl_sf_complex_logsin_e](#) (zr, zi, lszi, lszi)
- integer(fgsl_int) function [fgsl_sf_lnsinh_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_lncosh_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_polar_to_rect](#) (r, theta, x, y)
- integer(fgsl_int) function [fgsl_sf_rect_to_polar](#) (x, y, r, theta)
- integer(fgsl_int) function [fgsl_sf_angle_restrict_symm_e](#) (theta)
- integer(fgsl_int) function [fgsl_sf_angle_restrict_pos_e](#) (theta)
- integer(fgsl_int) function [fgsl_sf_sin_err_e](#) (x, dx, result)
- integer(fgsl_int) function [fgsl_sf_cos_err_e](#) (x, dx, result)
- integer(fgsl_int) function [fgsl_sf_zeta_int_e](#) (n, result)
- integer(fgsl_int) function [fgsl_sf_zeta_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_zetam1_int_e](#) (n, result)
- integer(fgsl_int) function [fgsl_sf_zetam1_e](#) (x, result)
- integer(fgsl_int) function [fgsl_sf_hzeta_e](#) (s, q, result)
- integer(fgsl_int) function [fgsl_sf_eta_int_e](#) (n, result)
- integer(fgsl_int) function [fgsl_sf_eta_e](#) (x, result)
- elemental subroutine [gsl_sf_to_fgsl_sf](#) (result, source)
- elemental subroutine [gsl_sfe10_to_fgsl_sfe10](#) (result, source)
- integer(fgsl_int) function [fgsl_sf_legendre_array](#) (norm, lmax, x, result_array)
- integer(fgsl_int) function [fgsl_sf_legendre_array_e](#) (norm, lmax, x, csphase, result_array)
- integer(fgsl_int) function [fgsl_sf_legendre_deriv_array](#) (norm, lmax, x, result_array, result_deriv_array)
- integer(fgsl_int) function [fgsl_sf_legendre_deriv_array_e](#) (norm, lmax, x, csphase, result_array, result_deriv↵_array)
- integer(fgsl_int) function [fgsl_sf_legendre_deriv_alt_array](#) (norm, lmax, x, result_array, result_deriv_array)
- integer(fgsl_int) function [fgsl_sf_legendre_deriv_alt_array_e](#) (norm, lmax, x, csphase, result_array, result_↵_deriv_array)
- integer(fgsl_int) function [fgsl_sf_legendre_deriv2_array](#) (norm, lmax, x, result_array, result_deriv_array, result_deriv2_array)
- integer(fgsl_int) function [fgsl_sf_legendre_deriv2_array_e](#) (norm, lmax, x, csphase, result_array, result_↵_deriv_array, result_deriv2_array)
- integer(fgsl_int) function [fgsl_sf_legendre_deriv2_alt_array](#) (norm, lmax, x, result_array, result_deriv_array, result_deriv2_array)

- integer(fgsl_int) function [fgsl_sf_legendre_deriv2_alt_array_e](#) (norm, lmax, x, csphase, result_array, result←_deriv_array, result_deriv2_array)
- integer(fgsl_int) function [fgsl_sf_mathieu_a_array](#) (order_min, order_max, qq, work, result_array)
- integer(fgsl_int) function [fgsl_sf_mathieu_b_array](#) (order_min, order_max, qq, work, result_array)
- integer(fgsl_int) function [fgsl_sf_mathieu_a_e](#) (order, qq, result)
- integer(fgsl_int) function [fgsl_sf_mathieu_b_e](#) (order, qq, result)
- type(fgsl_sf_mathieu_workspace) function [fgsl_sf_mathieu_alloc](#) (nn, qq)
- subroutine [fgsl_sf_mathieu_free](#) (workspace)
- integer(fgsl_int) function [fgsl_sf_mathieu_ce_e](#) (order, qq, zz, result)
- integer(fgsl_int) function [fgsl_sf_mathieu_se_e](#) (order, qq, zz, result)
- integer(fgsl_int) function [fgsl_sf_mathieu_ce_array](#) (nmin, nmax, qq, zz, work, result_array)
- integer(fgsl_int) function [fgsl_sf_mathieu_se_array](#) (nmin, nmax, qq, zz, work, result_array)
- integer(fgsl_int) function [fgsl_sf_mathieu_mc_e](#) (kind, order, qq, zz, result)
- integer(fgsl_int) function [fgsl_sf_mathieu_ms_e](#) (kind, order, qq, zz, result)
- integer(fgsl_int) function [fgsl_sf_mathieu_mc_array](#) (kind, nmin, nmax, qq, zz, work, result_array)
- integer(fgsl_int) function [fgsl_sf_mathieu_ms_array](#) (kind, nmin, nmax, qq, zz, work, result_array)

49.73.1 Function/Subroutine Documentation

49.73.1.1 fgsl_sf_airy_ai()

```
real(fgsl_double) function fgsl_sf_airy_ai (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.2 fgsl_sf_airy_ai_deriv()

```
real(fgsl_double) function fgsl_sf_airy_ai_deriv (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.3 fgsl_sf_airy_ai_deriv_e()

```
integer(fgsl_int) function fgsl_sf_airy_ai_deriv_e (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.4 fgsl_sf_airy_ai_deriv_scaled()

```
real(fgsl_double) function fgsl_sf_airy_ai_deriv_scaled (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.5 fgsl_sf_airy_ai_deriv_scaled_e()

```
integer(fgsl_int) function fgsl_sf_airy_ai_deriv_scaled_e (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.6 fgsl_sf_airy_ai_e()

```
integer(fgsl_int) function fgsl_sf_airy_ai_e (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.7 fgsl_sf_airy_ai_scaled()

```
real(fgsl_double) function fgsl_sf_airy_ai_scaled (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.8 fgsl_sf_airy_ai_scaled_e()

```
integer(fgsl_int) function fgsl_sf_airy_ai_scaled_e (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.9 fgsl_sf_airy_bi()

```
real(fgsl_double) function fgsl_sf_airy_bi (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.10 fgsl_sf_airy_bi_deriv()

```
real(fgsl_double) function fgsl_sf_airy_bi_deriv (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.11 fgsl_sf_airy_bi_deriv_e()

```
integer(fgsl_int) function fgsl_sf_airy_bi_deriv_e (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.12 fgsl_sf_airy_bi_deriv_scaled()

```
real(fgsl_double) function fgsl_sf_airy_bi_deriv_scaled (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.13 fgsl_sf_airy_bi_deriv_scaled_e()

```
integer(fgsl_int) function fgsl_sf_airy_bi_deriv_scaled_e (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.14 fgsl_sf_airy_bi_e()

```
integer(fgsl_int) function fgsl_sf_airy_bi_e (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.15 fgsl_sf_airy_bi_scaled()

```
real(fgsl_double) function fgsl_sf_airy_bi_scaled (
    real(fgsl_double), intent(in) x,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.16 fgsl_sf_airy_bi_scaled_e()

```
integer(fgsl_int) function fgsl_sf_airy_bi_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.17 fgsl_sf_airy_zero_ai()

```
real(fgsl_double) function fgsl_sf_airy_zero_ai (  
    integer(fgsl_int), intent(in) s )
```

49.73.1.18 fgsl_sf_airy_zero_ai_deriv()

```
real(fgsl_double) function fgsl_sf_airy_zero_ai_deriv (  
    integer(fgsl_int), intent(in) s )
```

49.73.1.19 fgsl_sf_airy_zero_ai_deriv_e()

```
integer(fgsl_int) function fgsl_sf_airy_zero_ai_deriv_e (  
    integer(fgsl_int), intent(in) s,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.20 fgsl_sf_airy_zero_ai_e()

```
integer(fgsl_int) function fgsl_sf_airy_zero_ai_e (  
    integer(fgsl_int), intent(in) s,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.21 fgsl_sf_airy_zero_bi()

```
real(fgsl_double) function fgsl_sf_airy_zero_bi (  
    integer(fgsl_int), intent(in) s )
```


49.73.1.22 fgsl_sf_airy_zero_bi_deriv()

```
real(fgsl_double) function fgsl_sf_airy_zero_bi_deriv (
    integer(fgsl_int), intent(in) s )
```

49.73.1.23 fgsl_sf_airy_zero_bi_deriv_e()

```
integer(fgsl_int) function fgsl_sf_airy_zero_bi_deriv_e (
    integer(fgsl_int), intent(in) s,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.24 fgsl_sf_airy_zero_bi_e()

```
integer(fgsl_int) function fgsl_sf_airy_zero_bi_e (
    integer(fgsl_int), intent(in) s,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.25 fgsl_sf_angle_restrict_pos_e()

```
integer(fgsl_int) function fgsl_sf_angle_restrict_pos_e (
    real(fgsl_double), intent(inout) theta )
```

49.73.1.26 fgsl_sf_angle_restrict_symm_e()

```
integer(fgsl_int) function fgsl_sf_angle_restrict_symm_e (
    real(fgsl_double), intent(inout) theta )
```

49.73.1.27 fgsl_sf_atanint_e()

```
integer(fgsl_int) function fgsl_sf_atanint_e (
    real(fgsl_double), intent(in) x,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.28 fgsl_sf_bessel_ic0_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ic0_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.29 fgsl_sf_bessel_ic0_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ic0_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.30 fgsl_sf_bessel_ic1_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ic1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.31 fgsl_sf_bessel_ic1_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ic1_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.32 fgsl_sf_bessel_icn_e()

```
integer(fgsl_int) function fgsl_sf_bessel_icn_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.33 fgsl_sf_bessel_icn_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_icn_scaled_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.34 fgsl_sf_bessel_inu_e()

```
integer(fgsl_int) function fgsl_sf_bessel_inu_e (  
    real(fgsl_double), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.35 fgsl_sf_bessel_inu_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_inu_scaled_e (  
    real(fgsl_double), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.36 fgsl_sf_bessel_is0_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_is0_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.37 fgsl_sf_bessel_is1_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_is1_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.38 fgsl_sf_bessel_is2_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_is2_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.39 fgsl_sf_bessel_isl_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_isl_scaled_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.40 fgsl_sf_bessel_jc0_e()

```
integer(fgsl_int) function fgsl_sf_bessel_jc0_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.41 fgsl_sf_bessel_jc1_e()

```
integer(fgsl_int) function fgsl_sf_bessel_jc1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.42 fgsl_sf_bessel_jcn_e()

```
integer(fgsl_int) function fgsl_sf_bessel_jcn_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.43 fgsl_sf_bessel_jnu_e()

```
integer(fgsl_int) function fgsl_sf_bessel_jnu_e (  
    real(fgsl_double), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.44 fgsl_sf_bessel_js0_e()

```
integer(fgsl_int) function fgsl_sf_bessel_js0_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.45 fgsl_sf_bessel_js1_e()

```
integer(fgsl_int) function fgsl_sf_bessel_js1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.46 fgsl_sf_bessel_js2_e()

```
integer(fgsl_int) function fgsl_sf_bessel_js2_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.47 fgsl_sf_bessel_jsl_e()

```
integer(fgsl_int) function fgsl_sf_bessel_jsl_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.48 fgsl_sf_bessel_kc0_e()

```
integer(fgsl_int) function fgsl_sf_bessel_kc0_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.49 fgsl_sf_bessel_kc0_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_kc0_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.50 fgsl_sf_bessel_kc1_e()

```
integer(fgsl_int) function fgsl_sf_bessel_kc1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.51 fgsl_sf_bessel_kc1_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_kc1_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.52 fgsl_sf_bessel_kcn_e()

```
integer(fgsl_int) function fgsl_sf_bessel_kcn_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.53 fgsl_sf_bessel_kcn_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_kcn_scaled_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.54 fgsl_sf_bessel_knu_e()

```
integer(fgsl_int) function fgsl_sf_bessel_knu_e (  
    real(fgsl_double), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.55 fgsl_sf_bessel_knu_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_knu_scaled_e (  
    real(fgsl_double), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.56 fgsl_sf_bessel_ks0_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ks0_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.57 fgsl_sf_bessel_ks1_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ks1_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.58 fgsl_sf_bessel_ks2_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ks2_scaled_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.59 fgsl_sf_bessel_ksl_scaled_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ksl_scaled_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.60 fgsl_sf_bessel_lnknu_e()

```
integer(fgsl_int) function fgsl_sf_bessel_lnknu_e (  
    real(fgsl_double), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.61 fgsl_sf_bessel_sequence_jnu_e()

```
integer(fgsl_int) function fgsl_sf_bessel_sequence_jnu_e (  
    real(fgsl_double), intent(in) nu,  
    type(fgsl_mode_t), intent(in) mode,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous v )
```

49.73.1.62 fgsl_sf_bessel_yc0_e()

```
integer(fgsl_int) function fgsl_sf_bessel_yc0_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.63 fgsl_sf_bessel_yc1_e()

```
integer(fgsl_int) function fgsl_sf_bessel_yc1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.64 fgsl_sf_bessel_ycn_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ycn_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.65 fgsl_sf_bessel_ynu_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ynu_e (  
    real(fgsl_double), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.66 fgsl_sf_bessel_ys0_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ys0_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.67 fgsl_sf_bessel_ys1_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ys1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.68 fgsl_sf_bessel_ys2_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ys2_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.69 fgsl_sf_bessel_ysl_e()

```
integer(fgsl_int) function fgsl_sf_bessel_ysl_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```


49.73.1.70 fgsl_sf_bessel_zero_jc0_e()

```
integer(fgsl_int) function fgsl_sf_bessel_zero_jc0_e (  
    integer(fgsl_int), intent(in) s,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.71 fgsl_sf_bessel_zero_jc1_e()

```
integer(fgsl_int) function fgsl_sf_bessel_zero_jc1_e (  
    integer(fgsl_int), intent(in) s,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.72 fgsl_sf_bessel_zero_jnu_e()

```
integer(fgsl_int) function fgsl_sf_bessel_zero_jnu_e (  
    real(fgsl_double), intent(in) nu,  
    integer(fgsl_int), intent(in) s,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.73 fgsl_sf_beta_e()

```
integer(fgsl_int) function fgsl_sf_beta_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.74 fgsl_sf_beta_inc_e()

```
integer(fgsl_int) function fgsl_sf_beta_inc_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.75 fgsl_sf_chi_e()

```
integer(fgsl_int) function fgsl_sf_chi_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.76 fgsl_sf_choose_e()

```
integer(fgsl_int) function fgsl_sf_choose_e (  
    integer(c_int), intent(in) n,  
    integer(c_int), intent(in) m,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.77 fgsl_sf_ci_e()

```
integer(fgsl_int) function fgsl_sf_ci_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.78 fgsl_sf_clausen_e()

```
integer(fgsl_int) function fgsl_sf_clausen_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.79 fgsl_sf_complex_cos_e()

```
integer(fgsl_int) function fgsl_sf_complex_cos_e (  
    real(fgsl_double), intent(in) zr,  
    real(fgsl_double), intent(in) zi,  
    type(fgsl_sf_result), intent(out) czr,  
    type(fgsl_sf_result), intent(out) czi )
```

49.73.1.80 fgsl_sf_complex_dilog_e()

```
integer(fgsl_int) function fgsl_sf_complex_dilog_e (  
    real(fgsl_double), intent(in) r,  
    real(fgsl_double), intent(in) theta,  
    type(fgsl_sf_result), intent(out) result_re,  
    type(fgsl_sf_result), intent(out) result_im )
```

49.73.1.81 fgsl_sf_complex_log_e()

```
integer(fgsl_int) function fgsl_sf_complex_log_e (  
    real(fgsl_double), intent(in) zr,  
    real(fgsl_double), intent(in) zi,  
    type(fgsl_sf_result), intent(out) lnr,  
    type(fgsl_sf_result), intent(out) theta )
```

49.73.1.82 fgsl_sf_complex_logsin_e()

```
integer(fgsl_int) function fgsl_sf_complex_logsin_e (  
    real(fgsl_double), intent(in) zr,  
    real(fgsl_double), intent(in) zi,  
    type(fgsl_sf_result), intent(out) lsZR,  
    type(fgsl_sf_result), intent(out) lszi )
```

49.73.1.83 fgsl_sf_complex_sin_e()

```
integer(fgsl_int) function fgsl_sf_complex_sin_e (  
    real(fgsl_double), intent(in) zr,  
    real(fgsl_double), intent(in) zi,  
    type(fgsl_sf_result), intent(out) szr,  
    type(fgsl_sf_result), intent(out) szi )
```

49.73.1.84 fgsl_sf_conicalp_0_e()

```
integer(fgsl_int) function fgsl_sf_conicalp_0_e (  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.85 fgsl_sf_conicalp_1_e()

```
integer(fgsl_int) function fgsl_sf_conicalp_1_e (  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.86 fgsl_sf_conicalp_cyl_reg_e()

```
integer(fgsl_int) function fgsl_sf_conicalp_cyl_reg_e (  
    integer(fgsl_int), intent(in) l,  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.87 fgsl_sf_conicalp_half_e()

```
integer(fgsl_int) function fgsl_sf_conicalp_half_e (  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.88 fgsl_sf_conicalp_mhalf_e()

```
integer(fgsl_int) function fgsl_sf_conicalp_mhalf_e (  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.89 fgsl_sf_conicalp_sph_reg_e()

```
integer(fgsl_int) function fgsl_sf_conicalp_sph_reg_e (  
    integer(fgsl_int), intent(in) l,  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.90 fgsl_sf_cos_err_e()

```
integer(fgsl_int) function fgsl_sf_cos_err_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) dx,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.91 fgsl_sf_coulomb_cl_array()

```
integer(fgsl_int) function fgsl_sf_coulomb_cl_array (  
    real(fgsl_double), intent(in) l_min,  
    real(fgsl_double), intent(in) eta,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous cl )
```

49.73.1.92 fgsl_sf_coulomb_cl_e()

```
integer(fgsl_int) function fgsl_sf_coulomb_cl_e (  
    real(fgsl_double), intent(in) l,  
    real(fgsl_double), intent(in) eta,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.93 fgsl_sf_coulomb_wave_f_array()

```
integer(fgsl_int) function fgsl_sf_coulomb_wave_f_array (  
    real(fgsl_double), intent(in) l_min,  
    real(fgsl_double), intent(in) eta,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous fc_array,  
    real(fgsl_double), intent(out) f_exponent )
```

49.73.1.94 fgsl_sf_coulomb_wave_fg_array()

```
integer(fgsl_int) function fgsl_sf_coulomb_wave_fg_array (  
    real(fgsl_double), intent(in) l_min,  
    real(fgsl_double), intent(in) eta,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(:), intent(out), target, contiguous fc_array,  
    real(fgsl_double), dimension(:), intent(out), target, contiguous gc_array,  
    real(fgsl_double), intent(out) f_exponent,  
    real(fgsl_double), intent(out) g_exponent )
```

49.73.1.95 fgsl_sf_coulomb_wave_fg_e()

```
integer(fgsl_int) function fgsl_sf_coulomb_wave_fg_e (  
    real(fgsl_double), intent(in) eta,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) l_f,  
    integer(fgsl_int), intent(in) k,  
    type(fgsl_sf_result), intent(out) f,  
    type(fgsl_sf_result), intent(out) fp,  
    type(fgsl_sf_result), intent(out) g,  
    type(fgsl_sf_result), intent(out) gp,  
    real(fgsl_double), intent(out) exp_f,  
    real(fgsl_double), intent(out) exp_g )
```

49.73.1.96 fgsl_sf_coulomb_wave_fgp_array()

```
integer(fgsl_int) function fgsl_sf_coulomb_wave_fgp_array (
    real(fgsl_double), intent(in) l_min,
    real(fgsl_double), intent(in) eta,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous fc_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous fcp_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous gc_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous gcp_array,
    real(fgsl_double), intent(out) f_exponent,
    real(fgsl_double), intent(out) g_exponent )
```

49.73.1.97 fgsl_sf_coulomb_wave_sphf_array()

```
integer(fgsl_int) function fgsl_sf_coulomb_wave_sphf_array (
    real(fgsl_double), intent(in) l_min,
    real(fgsl_double), intent(in) eta,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous fc_array,
    real(fgsl_double), intent(out) f_exponent )
```

49.73.1.98 fgsl_sf_coupling_3j_e()

```
integer(fgsl_int) function fgsl_sf_coupling_3j_e (
    integer(fgsl_int), intent(in) two_ja,
    integer(fgsl_int), intent(in) two_jb,
    integer(fgsl_int), intent(in) two_jc,
    integer(fgsl_int), intent(in) two_ma,
    integer(fgsl_int), intent(in) two_mb,
    integer(fgsl_int), intent(in) two_mc,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.99 fgsl_sf_coupling_6j_e()

```
integer(fgsl_int) function fgsl_sf_coupling_6j_e (
    integer(fgsl_int), intent(in) two_ja,
    integer(fgsl_int), intent(in) two_jb,
    integer(fgsl_int), intent(in) two_jc,
    integer(fgsl_int), intent(in) two_jd,
    integer(fgsl_int), intent(in) two_je,
    integer(fgsl_int), intent(in) two_jf,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.100 fgsl_sf_coupling_9j_e()

```
integer(fgsl_int) function fgsl_sf_coupling_9j_e (  
    integer(fgsl_int), intent(in) two_ja,  
    integer(fgsl_int), intent(in) two_jb,  
    integer(fgsl_int), intent(in) two_jc,  
    integer(fgsl_int), intent(in) two_jd,  
    integer(fgsl_int), intent(in) two_je,  
    integer(fgsl_int), intent(in) two_jf,  
    integer(fgsl_int), intent(in) two_jg,  
    integer(fgsl_int), intent(in) two_jh,  
    integer(fgsl_int), intent(in) two_ji,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.101 fgsl_sf_dawson_e()

```
integer(fgsl_int) function fgsl_sf_dawson_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.102 fgsl_sf_debye_1_e()

```
integer(fgsl_int) function fgsl_sf_debye_1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.103 fgsl_sf_debye_2_e()

```
integer(fgsl_int) function fgsl_sf_debye_2_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.104 fgsl_sf_debye_3_e()

```
integer(fgsl_int) function fgsl_sf_debye_3_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.105 fgsl_sf_debye_4_e()

```
integer(fgsl_int) function fgsl_sf_debye_4_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.106 fgsl_sf_debye_5_e()

```
integer(fgsl_int) function fgsl_sf_debye_5_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.107 fgsl_sf_debye_6_e()

```
integer(fgsl_int) function fgsl_sf_debye_6_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.108 fgsl_sf_dilog_e()

```
integer(fgsl_int) function fgsl_sf_dilog_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.109 fgsl_sf_doublefact_e()

```
integer(fgsl_int) function fgsl_sf_doublefact_e (  
    integer(c_int), intent(in) n,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.110 fgsl_sf_ellint_d()

```
real(fgsl_double) function fgsl_sf_ellint_d (  
    real(fgsl_double), intent(in) phi,  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode )
```


49.73.1.111 fgsl_sf_ellint_d_e()

```
integer(fgsl_int) function fgsl_sf_ellint_d_e (  
    real(fgsl_double), intent(in) phi,  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.112 fgsl_sf_ellint_e()

```
real(fgsl_double) function fgsl_sf_ellint_e (  
    real(fgsl_double), intent(in) phi,  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.113 fgsl_sf_ellint_e_e()

```
integer(fgsl_int) function fgsl_sf_ellint_e_e (  
    real(fgsl_double), intent(in) phi,  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.114 fgsl_sf_ellint_ecomp()

```
real(fgsl_double) function fgsl_sf_ellint_ecomp (  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.115 fgsl_sf_ellint_ecomp_e()

```
integer(fgsl_int) function fgsl_sf_ellint_ecomp_e (  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.116 fgsl_sf_ellint_f()

```
real(fgsl_double) function fgsl_sf_ellint_f (  
    real(fgsl_double), intent(in) phi,  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.117 fgsl_sf_ellint_f_e()

```
integer(fgsl_int) function fgsl_sf_ellint_f_e (  
    real(fgsl_double), intent(in) phi,  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.118 fgsl_sf_ellint_kcomp()

```
real(fgsl_double) function fgsl_sf_ellint_kcomp (  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.119 fgsl_sf_ellint_kcomp_e()

```
integer(fgsl_int) function fgsl_sf_ellint_kcomp_e (  
    real(fgsl_double), intent(in) k,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.120 fgsl_sf_ellint_p()

```
real(fgsl_double) function fgsl_sf_ellint_p (  
    real(fgsl_double), intent(in) phi,  
    real(fgsl_double), intent(in) k,  
    real(fgsl_double), intent(in) n,  
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.121 fgsl_sf_ellint_p_e()

```
integer(fgsl_int) function fgsl_sf_ellint_p_e (  
    real(fgsl_double), intent(in) phi,  
    real(fgsl_double), intent(in) k,  
    real(fgsl_double), intent(in) n,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.122 fgsl_sf_ellint_pcomp()

```
real(fgsl_double) function fgsl_sf_ellint_pcomp (  
    real(fgsl_double), intent(in) k,  
    real(fgsl_double), intent(in) n,  
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.123 fgsl_sf_ellint_pcomp_e()

```
integer(fgsl_int) function fgsl_sf_ellint_pcomp_e (  
    real(fgsl_double), intent(in) k,  
    real(fgsl_double), intent(in) n,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.124 fgsl_sf_ellint_rc()

```
real(fgsl_double) function fgsl_sf_ellint_rc (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.125 fgsl_sf_ellint_rc_e()

```
integer(fgsl_int) function fgsl_sf_ellint_rc_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.126 fgsl_sf_ellint_rd()

```
real(fgsl_double) function fgsl_sf_ellint_rd (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    real(fgsl_double), intent(in) z,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.127 fgsl_sf_ellint_rd_e()

```
integer(fgsl_int) function fgsl_sf_ellint_rd_e (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    real(fgsl_double), intent(in) z,
    type(fgsl_mode_t), intent(in) mode,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.128 fgsl_sf_ellint_rf()

```
real(fgsl_double) function fgsl_sf_ellint_rf (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    real(fgsl_double), intent(in) z,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.129 fgsl_sf_ellint_rf_e()

```
integer(fgsl_int) function fgsl_sf_ellint_rf_e (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    real(fgsl_double), intent(in) z,
    type(fgsl_mode_t), intent(in) mode,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.130 fgsl_sf_ellint_rj()

```
real(fgsl_double) function fgsl_sf_ellint_rj (
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) y,
    real(fgsl_double), intent(in) z,
    real(fgsl_double), intent(in) p,
    type(fgsl_mode_t), intent(in) mode )
```

49.73.1.131 fgsl_sf_ellint_rj_e()

```
integer(fgsl_int) function fgsl_sf_ellint_rj_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    real(fgsl_double), intent(in) z,  
    real(fgsl_double), intent(in) p,  
    type(fgsl_mode_t), intent(in) mode,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.132 fgsl_sf_erf_e()

```
integer(fgsl_int) function fgsl_sf_erf_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.133 fgsl_sf_erf_q_e()

```
integer(fgsl_int) function fgsl_sf_erf_q_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.134 fgsl_sf_erf_z_e()

```
integer(fgsl_int) function fgsl_sf_erf_z_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.135 fgsl_sf_erfc_e()

```
integer(fgsl_int) function fgsl_sf_erfc_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.136 fgsl_sf_eta_e()

```
integer(fgsl_int) function fgsl_sf_eta_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.137 fgsl_sf_eta_int_e()

```
integer(fgsl_int) function fgsl_sf_eta_int_e (  
    integer(c_int), intent(in) n,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.138 fgsl_sf_exp_e()

```
integer(fgsl_int) function fgsl_sf_exp_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.139 fgsl_sf_exp_e10_e()

```
integer(fgsl_int) function fgsl_sf_exp_e10_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result_e10), intent(out) result )
```

49.73.1.140 fgsl_sf_exp_err_e()

```
integer(fgsl_int) function fgsl_sf_exp_err_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) dx,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.141 fgsl_sf_exp_err_e10_e()

```
integer(fgsl_int) function fgsl_sf_exp_err_e10_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) dx,  
    type(fgsl_sf_result_e10), intent(out) result )
```

49.73.1.142 fgsl_sf_exp_mult_e()

```
integer(fgsl_int) function fgsl_sf_exp_mult_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.143 fgsl_sf_exp_mult_e10_e()

```
integer(fgsl_int) function fgsl_sf_exp_mult_e10_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_sf_result_e10), intent(out) result )
```

49.73.1.144 fgsl_sf_exp_mult_err_e()

```
integer(fgsl_int) function fgsl_sf_exp_mult_err_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) dx,  
    real(fgsl_double), intent(in) y,  
    real(fgsl_double), intent(in) dy,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.145 fgsl_sf_exp_mult_err_e10_e()

```
integer(fgsl_int) function fgsl_sf_exp_mult_err_e10_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) dx,  
    real(fgsl_double), intent(in) y,  
    real(fgsl_double), intent(in) dy,  
    type(fgsl_sf_result_e10), intent(out) result )
```

49.73.1.146 fgsl_sf_expint_3_e()

```
integer(fgsl_int) function fgsl_sf_expint_3_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.147 fgsl_sf_expint_e1_e()

```
integer(fgsl_int) function fgsl_sf_expint_e1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.148 fgsl_sf_expint_e2_e()

```
integer(fgsl_int) function fgsl_sf_expint_e2_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.149 fgsl_sf_expint_ei_e()

```
integer(fgsl_int) function fgsl_sf_expint_ei_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.150 fgsl_sf_expint_en_e()

```
integer(fgsl_int) function fgsl_sf_expint_en_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.151 fgsl_sf_expm1_e()

```
integer(fgsl_int) function fgsl_sf_expm1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.152 fgsl_sf_exprel_2_e()

```
integer(fgsl_int) function fgsl_sf_exprel_2_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.153 fgsl_sf_exprel_e()

```
integer(fgsl_int) function fgsl_sf_exprel_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```


49.73.1.154 fgsl_sf_exprel_n_e()

```
integer(fgsl_int) function fgsl_sf_exprel_n_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.155 fgsl_sf_fact_e()

```
integer(fgsl_int) function fgsl_sf_fact_e (  
    integer(c_int), intent(in) n,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.156 fgsl_sf_fermi_dirac_0_e()

```
integer(fgsl_int) function fgsl_sf_fermi_dirac_0_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.157 fgsl_sf_fermi_dirac_1_e()

```
integer(fgsl_int) function fgsl_sf_fermi_dirac_1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.158 fgsl_sf_fermi_dirac_2_e()

```
integer(fgsl_int) function fgsl_sf_fermi_dirac_2_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.159 fgsl_sf_fermi_dirac_3half_e()

```
integer(fgsl_int) function fgsl_sf_fermi_dirac_3half_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.160 fgsl_sf_fermi_dirac_half_e()

```
integer(fgsl_int) function fgsl_sf_fermi_dirac_half_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.161 fgsl_sf_fermi_dirac_inc_0_e()

```
integer(fgsl_int) function fgsl_sf_fermi_dirac_inc_0_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) b,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.162 fgsl_sf_fermi_dirac_int_e()

```
integer(fgsl_int) function fgsl_sf_fermi_dirac_int_e (  
    integer(fgsl_int), intent(in) i,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.163 fgsl_sf_fermi_dirac_m1_e()

```
integer(fgsl_int) function fgsl_sf_fermi_dirac_m1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.164 fgsl_sf_fermi_dirac_mhalf_e()

```
integer(fgsl_int) function fgsl_sf_fermi_dirac_mhalf_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.165 fgsl_sf_gamma_e()

```
integer(fgsl_int) function fgsl_sf_gamma_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.166 fgsl_sf_gamma_inc_e()

```
integer(fgsl_int) function fgsl_sf_gamma_inc_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.167 fgsl_sf_gamma_inc_p_e()

```
integer(fgsl_int) function fgsl_sf_gamma_inc_p_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.168 fgsl_sf_gamma_inc_q_e()

```
integer(fgsl_int) function fgsl_sf_gamma_inc_q_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.169 fgsl_sf_gammainv_e()

```
integer(fgsl_int) function fgsl_sf_gammainv_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.170 fgsl_sf_gammastar_e()

```
integer(fgsl_int) function fgsl_sf_gammastar_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.171 fgsl_sf_gegenpoly_1_e()

```
integer(fgsl_int) function fgsl_sf_gegenpoly_1_e (  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.172 fgsl_sf_gegenpoly_2_e()

```
integer(fgsl_int) function fgsl_sf_gegenpoly_2_e (  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.173 fgsl_sf_gegenpoly_3_e()

```
integer(fgsl_int) function fgsl_sf_gegenpoly_3_e (  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.174 fgsl_sf_gegenpoly_array()

```
integer(fgsl_int) function fgsl_sf_gegenpoly_array (  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.175 fgsl_sf_gegenpoly_n_e()

```
integer(fgsl_int) function fgsl_sf_gegenpoly_n_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) lambda,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.176 fgsl_sf_hazard_e()

```
integer(fgsl_int) function fgsl_sf_hazard_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.177 fgsl_sf_hermite_deriv_e()

```
integer(fgsl_int) function fgsl_sf_hermite_deriv_e (  
    integer(fgsl_int), intent(in) m,  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.178 fgsl_sf_hermite_e()

```
integer(fgsl_int) function fgsl_sf_hermite_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.179 fgsl_sf_hermite_func_e()

```
integer(fgsl_int) function fgsl_sf_hermite_func_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.180 fgsl_sf_hermite_func_fast_e()

```
integer(fgsl_int) function fgsl_sf_hermite_func_fast_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.181 fgsl_sf_hermite_func_series_e()

```
integer(fgsl_int) function fgsl_sf_hermite_func_series_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(*), intent(in) a,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.182 fgsl_sf_hermite_phys_e()

```
integer(fgsl_int) function fgsl_sf_hermite_phys_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.183 fgsl_sf_hermite_phys_series_e()

```
integer(fgsl_int) function fgsl_sf_hermite_phys_series_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(*), intent(in) a,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.184 fgsl_sf_hermite_prob_deriv_e()

```
integer(fgsl_int) function fgsl_sf_hermite_prob_deriv_e (  
    integer(fgsl_int), intent(in) m,  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.185 fgsl_sf_hermite_prob_e()

```
integer(fgsl_int) function fgsl_sf_hermite_prob_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.186 fgsl_sf_hermite_prob_series_e()

```
integer(fgsl_int) function fgsl_sf_hermite_prob_series_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(*), intent(in) a,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.187 fgsl_sf_hermite_prob_zero_e()

```
integer(fgsl_int) function fgsl_sf_hermite_prob_zero_e (  
    integer(fgsl_int), intent(in) n,  
    integer(fgsl_int), intent(in) s,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.188 fgsl_sf_hermite_series_e()

```
integer(fgsl_int) function fgsl_sf_hermite_series_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(*), intent(in) a,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.189 fgsl_sf_hermite_zero_e()

```
integer(fgsl_int) function fgsl_sf_hermite_zero_e (  
    integer(fgsl_int), intent(in) n,  
    integer(fgsl_int), intent(in) s,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.190 fgsl_sf_hydrogenicr_1_e()

```
integer(fgsl_int) function fgsl_sf_hydrogenicr_1_e (  
    real(fgsl_double), intent(in) z,  
    real(fgsl_double), intent(in) r,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.191 fgsl_sf_hydrogenicr_e()

```
integer(fgsl_int) function fgsl_sf_hydrogenicr_e (  
    integer(fgsl_int), intent(in) n,  
    integer(fgsl_int), intent(in) l,  
    real(fgsl_double), intent(in) z,  
    real(fgsl_double), intent(in) r,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.192 fgsl_sf_hyperg_0f1_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_0f1_e (  
    real(fgsl_double), intent(in) c,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.193 fgsl_sf_hyperg_1f1_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_1f1_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.194 fgsl_sf_hyperg_1f1_int_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_1f1_int_e (  
    integer(fgsl_int), intent(in) m,  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.195 fgsl_sf_hyperg_2f0_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_2f0_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.196 fgsl_sf_hyperg_2f1_conj_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_2f1_conj_e (  
    real(fgsl_double), intent(in) ar,  
    real(fgsl_double), intent(in) ai,  
    real(fgsl_double), intent(in) c,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```


49.73.1.197 fgsl_sf_hyperg_2f1_conj_renorm_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_2f1_conj_renorm_e (  
    real(fgsl_double), intent(in) ar,  
    real(fgsl_double), intent(in) ai,  
    real(fgsl_double), intent(in) c,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.198 fgsl_sf_hyperg_2f1_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_2f1_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) c,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.199 fgsl_sf_hyperg_2f1_renorm_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_2f1_renorm_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) c,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.200 fgsl_sf_hyperg_u_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_u_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.201 fgsl_sf_hyperg_u_e10_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_u_e10_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result_e10), intent(out) result )
```

49.73.1.202 fgsl_sf_hyperg_u_int_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_u_int_e (  
    integer(fgsl_int), intent(in) m,  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.203 fgsl_sf_hyperg_u_int_e10_e()

```
integer(fgsl_int) function fgsl_sf_hyperg_u_int_e10_e (  
    integer(fgsl_int), intent(in) m,  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result_e10), intent(out) result )
```

49.73.1.204 fgsl_sf_hypot_e()

```
integer(fgsl_int) function fgsl_sf_hypot_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.205 fgsl_sf_hzeta_e()

```
integer(fgsl_int) function fgsl_sf_hzeta_e (  
    real(fgsl_double), intent(in) s,  
    real(fgsl_double), intent(in) q,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.206 fgsl_sf_laguerre_1_e()

```
integer(fgsl_int) function fgsl_sf_laguerre_1_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.207 fgsl_sf_laguerre_2_e()

```
integer(fgsl_int) function fgsl_sf_laguerre_2_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.208 fgsl_sf_laguerre_3_e()

```
integer(fgsl_int) function fgsl_sf_laguerre_3_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.209 fgsl_sf_laguerre_n_e()

```
integer(fgsl_int) function fgsl_sf_laguerre_n_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.210 fgsl_sf_lambert_w0_e()

```
integer(fgsl_int) function fgsl_sf_lambert_w0_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.211 fgsl_sf_lambert_wm1_e()

```
integer(fgsl_int) function fgsl_sf_lambert_wm1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.212 fgsl_sf_legendre_array()

```
integer(fgsl_int) function fgsl_sf_legendre_array (  
    type(fgsl_sf_legendre_t), intent(in) norm,  
    integer(fgsl_size_t), intent(in) lmax,  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.213 fgsl_sf_legendre_array_e()

```
integer(fgsl_int) function fgsl_sf_legendre_array_e (
    type(fgsl_sf_legendre_t), intent(in) norm,
    integer(fgsl_size_t), intent(in) lmax,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) csphase,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.214 fgsl_sf_legendre_deriv2_alt_array()

```
integer(fgsl_int) function fgsl_sf_legendre_deriv2_alt_array (
    type(fgsl_sf_legendre_t), intent(in) norm,
    integer(fgsl_size_t), intent(in) lmax,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv↔
array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv2↔
_array )
```

49.73.1.215 fgsl_sf_legendre_deriv2_alt_array_e()

```
integer(fgsl_int) function fgsl_sf_legendre_deriv2_alt_array_e (
    type(fgsl_sf_legendre_t), intent(in) norm,
    integer(fgsl_size_t), intent(in) lmax,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) csphase,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv↔
array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv2↔
_array )
```

49.73.1.216 fgsl_sf_legendre_deriv2_array()

```
integer(fgsl_int) function fgsl_sf_legendre_deriv2_array (
    type(fgsl_sf_legendre_t), intent(in) norm,
    integer(fgsl_size_t), intent(in) lmax,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv↔
array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv2↔
_array )
```

49.73.1.217 fgsl_sf_legendre_deriv2_array_e()

```
integer(fgsl_int) function fgsl_sf_legendre_deriv2_array_e (
    type(fgsl_sf_legendre_t), intent(in) norm,
    integer(fgsl_size_t), intent(in) lmax,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) csphase,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv↵
array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv2↵
_array )
```

49.73.1.218 fgsl_sf_legendre_deriv_alt_array()

```
integer(fgsl_int) function fgsl_sf_legendre_deriv_alt_array (
    type(fgsl_sf_legendre_t), intent(in) norm,
    integer(fgsl_size_t), intent(in) lmax,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv↵
array )
```

49.73.1.219 fgsl_sf_legendre_deriv_alt_array_e()

```
integer(fgsl_int) function fgsl_sf_legendre_deriv_alt_array_e (
    type(fgsl_sf_legendre_t), intent(in) norm,
    integer(fgsl_size_t), intent(in) lmax,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) csphase,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv↵
array )
```

49.73.1.220 fgsl_sf_legendre_deriv_array()

```
integer(fgsl_int) function fgsl_sf_legendre_deriv_array (
    type(fgsl_sf_legendre_t), intent(in) norm,
    integer(fgsl_size_t), intent(in) lmax,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv↵
array )
```

49.73.1.221 fgsl_sf_legendre_deriv_array_e()

```
integer(fgsl_int) function fgsl_sf_legendre_deriv_array_e (
    type(fgsl_sf_legendre_t), intent(in) norm,
    integer(fgsl_size_t), intent(in) lmax,
    real(fgsl_double), intent(in) x,
    real(fgsl_double), intent(in) csphase,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_deriv_↵
array )
```

49.73.1.222 fgsl_sf_legendre_h3d_0_e()

```
integer(fgsl_int) function fgsl_sf_legendre_h3d_0_e (
    real(fgsl_double), intent(in) lambda,
    real(fgsl_double), intent(in) eta,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.223 fgsl_sf_legendre_h3d_1_e()

```
integer(fgsl_int) function fgsl_sf_legendre_h3d_1_e (
    real(fgsl_double), intent(in) lambda,
    real(fgsl_double), intent(in) eta,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.224 fgsl_sf_legendre_h3d_array()

```
integer(fgsl_int) function fgsl_sf_legendre_h3d_array (
    real(fgsl_double), intent(in) lambda,
    real(fgsl_double), intent(in) eta,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.225 fgsl_sf_legendre_h3d_e()

```
integer(fgsl_int) function fgsl_sf_legendre_h3d_e (
    integer(fgsl_int), intent(in) l,
    real(fgsl_double), intent(in) lambda,
    real(fgsl_double), intent(in) eta,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.226 fgsl_sf_legendre_p1_e()

```
integer(fgsl_int) function fgsl_sf_legendre_p1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.227 fgsl_sf_legendre_p2_e()

```
integer(fgsl_int) function fgsl_sf_legendre_p2_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.228 fgsl_sf_legendre_p3_e()

```
integer(fgsl_int) function fgsl_sf_legendre_p3_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.229 fgsl_sf_legendre_pl_array()

```
real(fgsl_double) function fgsl_sf_legendre_pl_array (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.230 fgsl_sf_legendre_pl_deriv_array()

```
real(fgsl_double) function fgsl_sf_legendre_pl_deriv_array (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous deriv_array )
```

49.73.1.231 fgsl_sf_legendre_pl_e()

```
integer(fgsl_int) function fgsl_sf_legendre_pl_e (  
    integer(fgsl_int), intent(in) l,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.232 fgsl_sf_legendre_plm_e()

```
integer(fgsl_int) function fgsl_sf_legendre_plm_e (  
    integer(fgsl_int), intent(in) l,  
    integer(fgsl_int), intent(in) m,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.233 fgsl_sf_legendre_q0_e()

```
integer(fgsl_int) function fgsl_sf_legendre_q0_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.234 fgsl_sf_legendre_q1_e()

```
integer(fgsl_int) function fgsl_sf_legendre_q1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.235 fgsl_sf_legendre_ql_e()

```
integer(fgsl_int) function fgsl_sf_legendre_ql_e (  
    integer(fgsl_int), intent(in) l,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.236 fgsl_sf_legendre_sphplm_e()

```
integer(fgsl_int) function fgsl_sf_legendre_sphplm_e (  
    integer(fgsl_int), intent(in) l,  
    integer(fgsl_int), intent(in) m,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.237 fgsl_sf_lnbeta_e()

```
integer(fgsl_int) function fgsl_sf_lnbeta_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) b,  
    type(fgsl_sf_result), intent(out) result )
```


49.73.1.238 fgsl_sf_lnchoose_e()

```
integer(fgsl_int) function fgsl_sf_lnchoose_e (  
    integer(c_int), intent(in) n,  
    integer(c_int), intent(in) m,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.239 fgsl_sf_lncosh_e()

```
integer(fgsl_int) function fgsl_sf_lncosh_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.240 fgsl_sf_lndoublefact_e()

```
integer(fgsl_int) function fgsl_sf_lndoublefact_e (  
    integer(c_int), intent(in) n,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.241 fgsl_sf_lnfact_e()

```
integer(fgsl_int) function fgsl_sf_lnfact_e (  
    integer(c_int), intent(in) n,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.242 fgsl_sf_lngamma_complex_e()

```
integer(fgsl_int) function fgsl_sf_lngamma_complex_e (  
    real(fgsl_double), intent(in) zr,  
    real(fgsl_double), intent(in) zi,  
    type(fgsl_sf_result), intent(out) lnr,  
    type(fgsl_sf_result), intent(out) arg )
```

49.73.1.243 fgsl_sf_lngamma_e()

```
integer(fgsl_int) function fgsl_sf_lngamma_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.244 fgsl_sf_lngamma_sgn_e()

```
integer(fgsl_int) function fgsl_sf_lngamma_sgn_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result_lg,  
    real(fgsl_double), intent(out) sgn )
```

49.73.1.245 fgsl_sf_lnpoch_e()

```
integer(fgsl_int) function fgsl_sf_lnpoch_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.246 fgsl_sf_lnpoch_sgn_e()

```
integer(fgsl_int) function fgsl_sf_lnpoch_sgn_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result_lg,  
    real(fgsl_double), intent(out) sgn )
```

49.73.1.247 fgsl_sf_lnsinh_e()

```
integer(fgsl_int) function fgsl_sf_lnsinh_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.248 fgsl_sf_log_1plusx_e()

```
integer(fgsl_int) function fgsl_sf_log_1plusx_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.249 fgsl_sf_log_1plusx_mx_e()

```
integer(fgsl_int) function fgsl_sf_log_1plusx_mx_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.250 fgsl_sf_log_abs_e()

```
integer(fgsl_int) function fgsl_sf_log_abs_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.251 fgsl_sf_log_e()

```
integer(fgsl_int) function fgsl_sf_log_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.252 fgsl_sf_log_erfc_e()

```
integer(fgsl_int) function fgsl_sf_log_erfc_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.253 fgsl_sf_mathieu_a_array()

```
integer(fgsl_int) function fgsl_sf_mathieu_a_array (  
    integer(fgsl_int), intent(in) order_min,  
    integer(fgsl_int), intent(in) order_max,  
    real(fgsl_double), intent(in) qq,  
    type(fgsl_sf_mathieu_workspace), intent(inout) work,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.254 fgsl_sf_mathieu_a_e()

```
integer(fgsl_int) function fgsl_sf_mathieu_a_e (  
    integer(c_int), intent(in) order,  
    real(c_double), intent(in) qq,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.255 fgsl_sf_mathieu_alloc()

```
type(fgsl_sf_mathieu_workspace) function fgsl_sf_mathieu_alloc (  
    integer(fgsl_size_t), intent(in) nn,  
    real(fgsl_double), intent(in) qq )
```

49.73.1.256 fgsl_sf_mathieu_b_array()

```
integer(fgsl_int) function fgsl_sf_mathieu_b_array (
    integer(fgsl_int), intent(in) order_min,
    integer(fgsl_int), intent(in) order_max,
    real(fgsl_double), intent(in) qq,
    type(fgsl_sf_mathieu_workspace), intent(inout) work,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.257 fgsl_sf_mathieu_b_e()

```
integer(fgsl_int) function fgsl_sf_mathieu_b_e (
    integer(c_int), intent(in) order,
    real(c_double), intent(in) qq,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.258 fgsl_sf_mathieu_ce_array()

```
integer(fgsl_int) function fgsl_sf_mathieu_ce_array (
    integer(fgsl_int), intent(in) nmin,
    integer(fgsl_int), intent(in) nmax,
    real(fgsl_double), intent(in) qq,
    real(fgsl_double), intent(in) zz,
    type(fgsl_sf_mathieu_workspace), intent(inout) work,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.259 fgsl_sf_mathieu_ce_e()

```
integer(fgsl_int) function fgsl_sf_mathieu_ce_e (
    integer(fgsl_int), intent(in) order,
    real(fgsl_double), intent(in) qq,
    real(fgsl_double), intent(in) zz,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.260 fgsl_sf_mathieu_free()

```
subroutine fgsl_sf_mathieu_free (
    type(fgsl_sf_mathieu_workspace), intent(inout) workspace )
```

49.73.1.261 fgsl_sf_mathieu_mc_array()

```
integer(fgsl_int) function fgsl_sf_mathieu_mc_array (  
    integer(fgsl_int), intent(in) kind,  
    integer(fgsl_int), intent(in) nmin,  
    integer(fgsl_int), intent(in) nmax,  
    real(fgsl_double), intent(in) qq,  
    real(fgsl_double), intent(in) zz,  
    type(fgsl_sf_mathieu_workspace), intent(inout) work,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.262 fgsl_sf_mathieu_mc_e()

```
integer(fgsl_int) function fgsl_sf_mathieu_mc_e (  
    integer(fgsl_int), intent(in) kind,  
    integer(fgsl_int), intent(in) order,  
    real(fgsl_double), intent(in) qq,  
    real(fgsl_double), intent(in) zz,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.263 fgsl_sf_mathieu_ms_array()

```
integer(fgsl_int) function fgsl_sf_mathieu_ms_array (  
    integer(fgsl_int), intent(in) kind,  
    integer(fgsl_int), intent(in) nmin,  
    integer(fgsl_int), intent(in) nmax,  
    real(fgsl_double), intent(in) qq,  
    real(fgsl_double), intent(in) zz,  
    type(fgsl_sf_mathieu_workspace), intent(inout) work,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.264 fgsl_sf_mathieu_ms_e()

```
integer(fgsl_int) function fgsl_sf_mathieu_ms_e (  
    integer(fgsl_int), intent(in) kind,  
    integer(fgsl_int), intent(in) order,  
    real(fgsl_double), intent(in) qq,  
    real(fgsl_double), intent(in) zz,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.265 fgsl_sf_mathieu_se_array()

```
integer(fgsl_int) function fgsl_sf_mathieu_se_array (
    integer(fgsl_int), intent(in)  nmin,
    integer(fgsl_int), intent(in)  nmax,
    real(fgsl_double), intent(in)  qq,
    real(fgsl_double), intent(in)  zz,
    type(fgsl_sf_mathieu_workspace), intent(inout) work,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous result_array )
```

49.73.1.266 fgsl_sf_mathieu_se_e()

```
integer(fgsl_int) function fgsl_sf_mathieu_se_e (
    integer(fgsl_int), intent(in)  order,
    real(fgsl_double), intent(in)  qq,
    real(fgsl_double), intent(in)  zz,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.267 fgsl_sf_multiply_e()

```
integer(fgsl_int) function fgsl_sf_multiply_e (
    real(fgsl_double), intent(in)  x,
    real(fgsl_double), intent(in)  y,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.268 fgsl_sf_multiply_err_e()

```
integer(fgsl_int) function fgsl_sf_multiply_err_e (
    real(fgsl_double), intent(in)  x,
    real(fgsl_double), intent(in)  dx,
    real(fgsl_double), intent(in)  y,
    real(fgsl_double), intent(in)  dy,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.269 fgsl_sf_poch_e()

```
integer(fgsl_int) function fgsl_sf_poch_e (
    real(fgsl_double), intent(in)  a,
    real(fgsl_double), intent(in)  x,
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.270 fgsl_sf_pochrel_e()

```
integer(fgsl_int) function fgsl_sf_pochrel_e (  
    real(fgsl_double), intent(in) a,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.271 fgsl_sf_polar_to_rect()

```
integer(fgsl_int) function fgsl_sf_polar_to_rect (  
    real(fgsl_double), intent(in) r,  
    real(fgsl_double), intent(in) theta,  
    type(fgsl_sf_result), intent(out) x,  
    type(fgsl_sf_result), intent(out) y )
```

49.73.1.272 fgsl_sf_psi_1_e()

```
integer(fgsl_int) function fgsl_sf_psi_1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.273 fgsl_sf_psi_1_int_e()

```
integer(fgsl_int) function fgsl_sf_psi_1_int_e (  
    integer(c_int), intent(in) n,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.274 fgsl_sf_psi_1piy_e()

```
integer(fgsl_int) function fgsl_sf_psi_1piy_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.275 fgsl_sf_psi_e()

```
integer(fgsl_int) function fgsl_sf_psi_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.276 fgsl_sf_psi_int_e()

```
integer(fgsl_int) function fgsl_sf_psi_int_e (  
    integer(c_int), intent(in) n,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.277 fgsl_sf_psi_n_e()

```
integer(fgsl_int) function fgsl_sf_psi_n_e (  
    integer(fgsl_int), intent(in) m,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.278 fgsl_sf_rect_to_polar()

```
integer(fgsl_int) function fgsl_sf_rect_to_polar (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) y,  
    type(fgsl_sf_result), intent(out) r,  
    type(fgsl_sf_result), intent(out) theta )
```

49.73.1.279 fgsl_sf_shi_e()

```
integer(fgsl_int) function fgsl_sf_shi_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.280 fgsl_sf_si_e()

```
integer(fgsl_int) function fgsl_sf_si_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.281 fgsl_sf_sin_err_e()

```
integer(fgsl_int) function fgsl_sf_sin_err_e (  
    real(fgsl_double), intent(in) x,  
    real(fgsl_double), intent(in) dx,  
    type(fgsl_sf_result), intent(out) result )
```


49.73.1.282 fgsl_sf_sinc_e()

```
integer(fgsl_int) function fgsl_sf_sinc_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.283 fgsl_sf_synchrotron_1_e()

```
integer(fgsl_int) function fgsl_sf_synchrotron_1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.284 fgsl_sf_synchrotron_2_e()

```
integer(fgsl_int) function fgsl_sf_synchrotron_2_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.285 fgsl_sf_taylorcoeff_e()

```
integer(fgsl_int) function fgsl_sf_taylorcoeff_e (  
    integer(fgsl_int), intent(in) n,  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.286 fgsl_sf_transport_2_e()

```
integer(fgsl_int) function fgsl_sf_transport_2_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.287 fgsl_sf_transport_3_e()

```
integer(fgsl_int) function fgsl_sf_transport_3_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.288 fgsl_sf_transport_4_e()

```
integer(fgsl_int) function fgsl_sf_transport_4_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.289 fgsl_sf_transport_5_e()

```
integer(fgsl_int) function fgsl_sf_transport_5_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.290 fgsl_sf_zeta_e()

```
integer(fgsl_int) function fgsl_sf_zeta_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.291 fgsl_sf_zeta_int_e()

```
integer(fgsl_int) function fgsl_sf_zeta_int_e (  
    integer(c_int), intent(in) n,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.292 fgsl_sf_zetam1_e()

```
integer(fgsl_int) function fgsl_sf_zetam1_e (  
    real(fgsl_double), intent(in) x,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.293 fgsl_sf_zetam1_int_e()

```
integer(fgsl_int) function fgsl_sf_zetam1_int_e (  
    integer(c_int), intent(in) n,  
    type(fgsl_sf_result), intent(out) result )
```

49.73.1.294 `gsl_sf_to_fgsl_sf()`

```

elemental subroutine gsl_sf_to_fgsl_sf (
    type(fgsl_sf_result), intent(out) result,
    type(gsl_sf_result), intent(in) source )

```

49.73.1.295 `gsl_sfe10_to_fgsl_sfe10()`

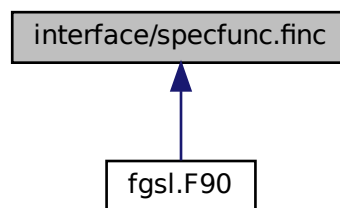
```

elemental subroutine gsl_sfe10_to_fgsl_sfe10 (
    type(fgsl_sf_result_e10), intent(out) result,
    type(gsl_sf_result_e10), intent(in) source )

```

49.74 interface/specfunc.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- real(c_double) function [gsl_sf_airy_ai](#) (x, mode)
- integer(c_int) function [gsl_sf_airy_ai_e](#) (x, mode, result)
- real(c_double) function [gsl_sf_airy_bi](#) (x, mode)
- integer(c_int) function [gsl_sf_airy_bi_e](#) (x, mode, result)
- real(c_double) function [gsl_sf_airy_ai_scaled](#) (x, mode)
- integer(c_int) function [gsl_sf_airy_ai_scaled_e](#) (x, mode, result)
- real(c_double) function [gsl_sf_airy_bi_scaled](#) (x, mode)
- integer(c_int) function [gsl_sf_airy_bi_scaled_e](#) (x, mode, result)
- real(c_double) function [gsl_sf_airy_ai_deriv](#) (x, mode)
- integer(c_int) function [gsl_sf_airy_ai_deriv_e](#) (x, mode, result)
- real(c_double) function [gsl_sf_airy_bi_deriv](#) (x, mode)
- integer(c_int) function [gsl_sf_airy_bi_deriv_e](#) (x, mode, result)
- real(c_double) function [gsl_sf_airy_ai_deriv_scaled](#) (x, mode)
- integer(c_int) function [gsl_sf_airy_ai_deriv_scaled_e](#) (x, mode, result)
- real(c_double) function [gsl_sf_airy_bi_deriv_scaled](#) (x, mode)
- integer(c_int) function [gsl_sf_airy_bi_deriv_scaled_e](#) (x, mode, result)

- `real(c_double)` function [gsl_sf_airy_zero_ai](#) (s)
- `integer(c_int)` function [gsl_sf_airy_zero_ai_e](#) (s, result)
- `real(c_double)` function [gsl_sf_airy_zero_bi](#) (s)
- `integer(c_int)` function [gsl_sf_airy_zero_bi_e](#) (s, result)
- `real(c_double)` function [gsl_sf_airy_zero_ai_deriv](#) (s)
- `integer(c_int)` function [gsl_sf_airy_zero_ai_deriv_e](#) (s, result)
- `real(c_double)` function [gsl_sf_airy_zero_bi_deriv](#) (s)
- `integer(c_int)` function [gsl_sf_airy_zero_bi_deriv_e](#) (s, result)
- `real(c_double)` function [fgsl_sf_bessel_jc0](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_jc0_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_jc1](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_jc1_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_jcn](#) (n, x)
- `integer(c_int)` function [gsl_sf_bessel_jcn_e](#) (n, x, result)
- `integer(c_int)` function [fgsl_sf_bessel_jcn_array](#) (nmin, nmax, x, result)
- `real(c_double)` function [fgsl_sf_bessel_yc0](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_yc0_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_yc1](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_yc1_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_ycn](#) (n, x)
- `integer(c_int)` function [gsl_sf_bessel_ycn_e](#) (n, x, result)
- `integer(c_int)` function [fgsl_sf_bessel_ycn_array](#) (nmin, nmax, x, result)
- `real(c_double)` function [fgsl_sf_bessel_ic0](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_ic0_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_ic1](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_ic1_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_icn](#) (n, x)
- `integer(c_int)` function [gsl_sf_bessel_icn_e](#) (n, x, result)
- `integer(c_int)` function [fgsl_sf_bessel_icn_array](#) (nmin, nmax, x, result)
- `real(c_double)` function [fgsl_sf_bessel_ic0_scaled](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_ic0_scaled_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_ic1_scaled](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_ic1_scaled_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_icn_scaled](#) (n, x)
- `integer(c_int)` function [gsl_sf_bessel_icn_scaled_e](#) (n, x, result)
- `integer(c_int)` function [fgsl_sf_bessel_icn_scaled_array](#) (nmin, nmax, x, result)
- `real(c_double)` function [fgsl_sf_bessel_kc0](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_kc0_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_kc1](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_kc1_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_kcn](#) (n, x)
- `integer(c_int)` function [gsl_sf_bessel_kcn_e](#) (n, x, result)
- `integer(c_int)` function [fgsl_sf_bessel_kcn_array](#) (nmin, nmax, x, result)
- `real(c_double)` function [fgsl_sf_bessel_kc0_scaled](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_kc0_scaled_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_kc1_scaled](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_kc1_scaled_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_kcn_scaled](#) (n, x)
- `integer(c_int)` function [gsl_sf_bessel_kcn_scaled_e](#) (n, x, result)
- `integer(c_int)` function [fgsl_sf_bessel_kcn_scaled_array](#) (nmin, nmax, x, result)
- `real(c_double)` function [fgsl_sf_bessel_js0](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_js0_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_js1](#) (x)
- `integer(c_int)` function [gsl_sf_bessel_js1_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_bessel_js2](#) (x)

- integer(c_int) function [gsl_sf_bessel_js2_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_jsl](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_jsl_e](#) (n, x, result)
- integer(c_int) function [fgsl_sf_bessel_jsl_array](#) (lmax, x, result)
- integer(c_int) function [fgsl_sf_bessel_jsl_stepped_array](#) (lmax, x, result)
- real(c_double) function [fgsl_sf_bessel_ys0](#) (x)
- integer(c_int) function [gsl_sf_bessel_ys0_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_ys1](#) (x)
- integer(c_int) function [gsl_sf_bessel_ys1_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_ys2](#) (x)
- integer(c_int) function [gsl_sf_bessel_ys2_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_ysl](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_ysl_e](#) (n, x, result)
- integer(c_int) function [fgsl_sf_bessel_ysl_array](#) (lmax, x, result)
- real(c_double) function [fgsl_sf_bessel_is0_scaled](#) (x)
- integer(c_int) function [gsl_sf_bessel_is0_scaled_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_is1_scaled](#) (x)
- integer(c_int) function [gsl_sf_bessel_is1_scaled_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_is2_scaled](#) (x)
- integer(c_int) function [gsl_sf_bessel_is2_scaled_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_isl_scaled](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_isl_scaled_e](#) (n, x, result)
- integer(c_int) function [fgsl_sf_bessel_isl_scaled_array](#) (lmax, x, result)
- real(c_double) function [fgsl_sf_bessel_ks0_scaled](#) (x)
- integer(c_int) function [gsl_sf_bessel_ks0_scaled_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_ks1_scaled](#) (x)
- integer(c_int) function [gsl_sf_bessel_ks1_scaled_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_ks2_scaled](#) (x)
- integer(c_int) function [gsl_sf_bessel_ks2_scaled_e](#) (x, result)
- real(c_double) function [fgsl_sf_bessel_ksl_scaled](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_ksl_scaled_e](#) (n, x, result)
- integer(c_int) function [fgsl_sf_bessel_ksl_scaled_array](#) (lmax, x, result)
- real(c_double) function [fgsl_sf_bessel_jnu](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_jnu_e](#) (n, x, result)
- integer(c_int) function [gsl_sf_bessel_sequence_jnu_e](#) (nu, mode, size, v)
- real(c_double) function [fgsl_sf_bessel_ynu](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_ynu_e](#) (n, x, result)
- real(c_double) function [fgsl_sf_bessel_inu](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_inu_e](#) (n, x, result)
- real(c_double) function [fgsl_sf_bessel_inu_scaled](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_inu_scaled_e](#) (n, x, result)
- real(c_double) function [fgsl_sf_bessel_knu](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_knu_e](#) (n, x, result)
- real(c_double) function [fgsl_sf_bessel_lnknu](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_lnknu_e](#) (n, x, result)
- real(c_double) function [fgsl_sf_bessel_knu_scaled](#) (n, x)
- integer(c_int) function [gsl_sf_bessel_knu_scaled_e](#) (n, x, result)
- real(c_double) function [fgsl_sf_bessel_zero_jc0](#) (s)
- integer(c_int) function [gsl_sf_bessel_zero_jc0_e](#) (s, result)
- real(c_double) function [fgsl_sf_bessel_zero_jc1](#) (s)
- integer(c_int) function [gsl_sf_bessel_zero_jc1_e](#) (s, result)
- real(c_double) function [fgsl_sf_bessel_zero_jnu](#) (nu, s)
- integer(c_int) function [gsl_sf_bessel_zero_jnu_e](#) (nu, s, result)
- real(c_double) function [fgsl_sf_clausen](#) (x)
- integer(c_int) function [gsl_sf_clausen_e](#) (x, result)

- `real(c_double)` function [fgsl_sf_hydrogenicr_1](#) (z, r)
- `integer(c_int)` function [gsl_sf_hydrogenicr_1_e](#) (z, r, result)
- `real(c_double)` function [fgsl_sf_hydrogenicr](#) (n, l, z, r)
- `integer(c_int)` function [gsl_sf_hydrogenicr_e](#) (n, l, z, r, result)
- `integer(c_int)` function [gsl_sf_coulomb_wave_fg_e](#) (eta, x, l_f, k, f, fp, g, gp, exp_f, exp_g)
- `integer(c_int)` function [gsl_sf_coulomb_wave_f_array](#) (l_min, kmax, eta, x, fc_array, f_exponent)
- `integer(c_int)` function [gsl_sf_coulomb_wave_fg_array](#) (l_min, kmax, eta, x, fc_array, gc_array, f_exponent, g_exponent)
- `integer(c_int)` function [gsl_sf_coulomb_wave_fgp_array](#) (l_min, kmax, eta, x, fc_array, fcp_array, gc_array, gcp_array, f_exponent, g_exponent)
- `integer(c_int)` function [gsl_sf_coulomb_wave_sphf_array](#) (l_min, kmax, eta, x, fc_array, f_exponent)
- `integer(c_int)` function [gsl_sf_coulomb_cl_e](#) (l, eta, result)
- `integer(c_int)` function [gsl_sf_coulomb_cl_array](#) (l_min, kmax, eta, cl)
- `real(c_double)` function [fgsl_sf_coupling_3j](#) (two_ja, two_jb, two_jc, two_ma, two_mb, two_mc)
- `integer(c_int)` function [gsl_sf_coupling_3j_e](#) (two_ja, two_jb, two_jc, two_ma, two_mb, two_mc, result)
- `real(c_double)` function [fgsl_sf_coupling_6j](#) (two_ja, two_jb, two_jc, two_jd, two_je, two_jf)
- `integer(c_int)` function [gsl_sf_coupling_6j_e](#) (two_ja, two_jb, two_jc, two_jd, two_je, two_jf, result)
- `real(c_double)` function [fgsl_sf_coupling_9j](#) (two_ja, two_jb, two_jc, two_jd, two_je, two_jf, two_jg, two_jh, two_ji)
- `integer(c_int)` function [gsl_sf_coupling_9j_e](#) (two_ja, two_jb, two_jc, two_jd, two_je, two_jf, two_jg, two_jh, two_ji, result)
- `real(c_double)` function [fgsl_sf_dawson](#) (x)
- `integer(c_int)` function [gsl_sf_dawson_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_debye_1](#) (x)
- `integer(c_int)` function [gsl_sf_debye_1_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_debye_2](#) (x)
- `integer(c_int)` function [gsl_sf_debye_2_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_debye_3](#) (x)
- `integer(c_int)` function [gsl_sf_debye_3_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_debye_4](#) (x)
- `integer(c_int)` function [gsl_sf_debye_4_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_debye_5](#) (x)
- `integer(c_int)` function [gsl_sf_debye_5_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_debye_6](#) (x)
- `integer(c_int)` function [gsl_sf_debye_6_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_dilog](#) (x)
- `integer(c_int)` function [gsl_sf_dilog_e](#) (x, result)
- `integer(c_int)` function [gsl_sf_complex_dilog_e](#) (r, theta, result_re, result_im)
- `integer(c_int)` function [gsl_sf_multiply_e](#) (x, y, result)
- `integer(c_int)` function [gsl_sf_multiply_err_e](#) (x, dx, y, dy, result)
- `real(c_double)` function [gsl_sf_ellint_kcomp](#) (k, mode)
- `integer(c_int)` function [gsl_sf_ellint_kcomp_e](#) (k, mode, result)
- `real(c_double)` function [gsl_sf_ellint_ecomp](#) (k, mode)
- `integer(c_int)` function [gsl_sf_ellint_ecomp_e](#) (k, mode, result)
- `real(c_double)` function [gsl_sf_ellint_pcomp](#) (k, n, mode)
- `integer(c_int)` function [gsl_sf_ellint_pcomp_e](#) (k, n, mode, result)
- `real(c_double)` function [gsl_sf_ellint_f](#) (phi, k, mode)
- `integer(c_int)` function [gsl_sf_ellint_f_e](#) (phi, k, mode, result)
- `real(c_double)` function [gsl_sf_ellint_e](#) (phi, k, mode)
- `integer(c_int)` function [gsl_sf_ellint_e_e](#) (phi, k, mode, result)
- `real(c_double)` function [gsl_sf_ellint_p](#) (phi, k, n, mode)
- `integer(c_int)` function [gsl_sf_ellint_p_e](#) (phi, k, n, mode, result)
- `real(c_double)` function [gsl_sf_ellint_d](#) (phi, k, mode)
- `integer(c_int)` function [gsl_sf_ellint_d_e](#) (phi, k, mode, result)
- `real(c_double)` function [gsl_sf_ellint_rc](#) (x, y, mode)

- integer(c_int) function [gsl_sf_ellint_rc_e](#) (x, y, mode, result)
- real(c_double) function [gsl_sf_ellint_rd](#) (x, y, z, mode)
- integer(c_int) function [gsl_sf_ellint_rd_e](#) (x, y, z, mode, result)
- real(c_double) function [gsl_sf_ellint_rf](#) (x, y, z, mode)
- integer(c_int) function [gsl_sf_ellint_rf_e](#) (x, y, z, mode, result)
- real(c_double) function [gsl_sf_ellint_rj](#) (x, y, z, p, mode)
- integer(c_int) function [gsl_sf_ellint_rj_e](#) (x, y, z, p, mode, result)
- integer(c_int) function [fgsl_sf_elljac_e](#) (u, m, sn, cn, dn)
- real(c_double) function [fgsl_sf_erf](#) (x)
- integer(c_int) function [gsl_sf_erf_e](#) (x, result)
- real(c_double) function [fgsl_sf_erfc](#) (x)
- integer(c_int) function [gsl_sf_erfc_e](#) (x, result)
- real(c_double) function [fgsl_sf_log_erfc](#) (x)
- integer(c_int) function [gsl_sf_log_erfc_e](#) (x, result)
- real(c_double) function [fgsl_sf_erf_z](#) (x)
- integer(c_int) function [gsl_sf_erf_z_e](#) (x, result)
- real(c_double) function [fgsl_sf_erf_q](#) (x)
- integer(c_int) function [gsl_sf_erf_q_e](#) (x, result)
- real(c_double) function [fgsl_sf_hazard](#) (x)
- integer(c_int) function [gsl_sf_hazard_e](#) (x, result)
- real(c_double) function [fgsl_sf_exp](#) (x)
- integer(c_int) function [gsl_sf_exp_e](#) (x, result)
- integer(c_int) function [gsl_sf_exp_e10_e](#) (x, result)
- real(c_double) function [fgsl_sf_exp_mult](#) (x, y)
- integer(c_int) function [gsl_sf_exp_mult_e](#) (x, y, result)
- integer(c_int) function [gsl_sf_exp_mult_e10_e](#) (x, y, result)
- real(c_double) function [fgsl_sf_expm1](#) (x)
- integer(c_int) function [gsl_sf_expm1_e](#) (x, result)
- real(c_double) function [fgsl_sf_exprel](#) (x)
- integer(c_int) function [gsl_sf_exprel_e](#) (x, result)
- real(c_double) function [fgsl_sf_exprel_2](#) (x)
- integer(c_int) function [gsl_sf_exprel_2_e](#) (x, result)
- real(c_double) function [fgsl_sf_exprel_n](#) (n, x)
- integer(c_int) function [gsl_sf_exprel_n_e](#) (n, x, result)
- integer(c_int) function [gsl_sf_exp_err_e](#) (x, dx, result)
- integer(c_int) function [gsl_sf_exp_err_e10_e](#) (x, dx, result)
- integer(c_int) function [gsl_sf_exp_mult_err_e](#) (x, dx, y, dy, result)
- integer(c_int) function [gsl_sf_exp_mult_err_e10_e](#) (x, dx, y, dy, result)
- real(c_double) function [fgsl_sf_expint_e1](#) (x)
- integer(c_int) function [gsl_sf_expint_e1_e](#) (x, result)
- real(c_double) function [fgsl_sf_expint_e2](#) (x)
- integer(c_int) function [gsl_sf_expint_e2_e](#) (x, result)
- real(c_double) function [fgsl_sf_expint_en](#) (n, x)
- integer(c_int) function [gsl_sf_expint_en_e](#) (n, x, result)
- real(c_double) function [fgsl_sf_expint_ei](#) (x)
- integer(c_int) function [gsl_sf_expint_ei_e](#) (x, result)
- real(c_double) function [fgsl_sf_shi](#) (x)
- integer(c_int) function [gsl_sf_shi_e](#) (x, result)
- real(c_double) function [fgsl_sf_chi](#) (x)
- integer(c_int) function [gsl_sf_chi_e](#) (x, result)
- real(c_double) function [fgsl_sf_expint_3](#) (x)
- integer(c_int) function [gsl_sf_expint_3_e](#) (x, result)
- real(c_double) function [fgsl_sf_si](#) (x)
- integer(c_int) function [gsl_sf_si_e](#) (x, result)
- real(c_double) function [fgsl_sf_ci](#) (x)

- integer(c_int) function [gsl_sf_ci_e](#) (x, result)
- real(c_double) function [fgsl_sf_atanint](#) (x)
- integer(c_int) function [gsl_sf_atanint_e](#) (x, result)
- real(c_double) function [fgsl_sf_fermi_dirac_m1](#) (x)
- integer(c_int) function [gsl_sf_fermi_dirac_m1_e](#) (x, result)
- real(c_double) function [fgsl_sf_fermi_dirac_0](#) (x)
- integer(c_int) function [gsl_sf_fermi_dirac_0_e](#) (x, result)
- real(c_double) function [fgsl_sf_fermi_dirac_1](#) (x)
- integer(c_int) function [gsl_sf_fermi_dirac_1_e](#) (x, result)
- real(c_double) function [fgsl_sf_fermi_dirac_2](#) (x)
- integer(c_int) function [gsl_sf_fermi_dirac_2_e](#) (x, result)
- real(c_double) function [fgsl_sf_fermi_dirac_int](#) (i, x)
- integer(c_int) function [gsl_sf_fermi_dirac_int_e](#) (i, x, result)
- real(c_double) function [fgsl_sf_fermi_dirac_mhalf](#) (x)
- integer(c_int) function [gsl_sf_fermi_dirac_mhalf_e](#) (x, result)
- real(c_double) function [fgsl_sf_fermi_dirac_half](#) (x)
- integer(c_int) function [gsl_sf_fermi_dirac_half_e](#) (x, result)
- real(c_double) function [fgsl_sf_fermi_dirac_3half](#) (x)
- integer(c_int) function [gsl_sf_fermi_dirac_3half_e](#) (x, result)
- real(c_double) function [fgsl_sf_fermi_dirac_inc_0](#) (x, b)
- integer(c_int) function [gsl_sf_fermi_dirac_inc_0_e](#) (x, b, result)
- real(c_double) function [fgsl_sf_gamma](#) (x)
- integer(c_int) function [gsl_sf_gamma_e](#) (x, result)
- real(c_double) function [fgsl_sf_lngamma](#) (x)
- integer(c_int) function [gsl_sf_lngamma_e](#) (x, result)
- integer(c_int) function [gsl_sf_lngamma_sgn_e](#) (x, result_lg, sgn)
- real(c_double) function [fgsl_sf_gammastar](#) (x)
- integer(c_int) function [gsl_sf_gammastar_e](#) (x, result)
- real(c_double) function [fgsl_sf_gammainv](#) (x)
- integer(c_int) function [gsl_sf_gammainv_e](#) (x, result)
- integer(c_int) function [gsl_sf_lngamma_complex_e](#) (zr, zi, lnr, arg)
- real(c_double) function [fgsl_sf_fact](#) (n)
- integer(c_int) function [gsl_sf_fact_e](#) (n, result)
- real(c_double) function [fgsl_sf_doublefact](#) (n)
- integer(c_int) function [gsl_sf_doublefact_e](#) (n, result)
- real(c_double) function [fgsl_sf_lnfact](#) (n)
- integer(c_int) function [gsl_sf_lnfact_e](#) (n, result)
- real(c_double) function [fgsl_sf_lndoublefact](#) (n)
- integer(c_int) function [gsl_sf_lndoublefact_e](#) (n, result)
- real(c_double) function [fgsl_sf_choose](#) (n, m)
- integer(c_int) function [gsl_sf_choose_e](#) (n, m, result)
- real(c_double) function [fgsl_sf_lnchoose](#) (n, m)
- integer(c_int) function [gsl_sf_lnchoose_e](#) (n, m, result)
- real(c_double) function [fgsl_sf_taylorcoeff](#) (n, x)
- integer(c_int) function [gsl_sf_taylorcoeff_e](#) (n, x, result)
- real(c_double) function [fgsl_sf_poch](#) (a, x)
- integer(c_int) function [gsl_sf_poch_e](#) (a, x, result)
- real(c_double) function [fgsl_sf_lnpoch](#) (a, x)
- integer(c_int) function [gsl_sf_lnpoch_e](#) (a, x, result)
- integer(c_int) function [gsl_sf_lnpoch_sgn_e](#) (a, x, result_lg, sgn)
- real(c_double) function [fgsl_sf_pochrel](#) (a, x)
- integer(c_int) function [gsl_sf_pochrel_e](#) (a, x, result)
- real(c_double) function [fgsl_sf_gamma_inc](#) (a, x)
- integer(c_int) function [gsl_sf_gamma_inc_e](#) (a, x, result)
- real(c_double) function [fgsl_sf_gamma_inc_q](#) (a, x)

- integer(c_int) function [gsl_sf_gamma_inc_q_e](#) (a, x, result)
- real(c_double) function [fgsl_sf_gamma_inc_p](#) (a, x)
- integer(c_int) function [gsl_sf_gamma_inc_p_e](#) (a, x, result)
- real(c_double) function [fgsl_sf_beta](#) (a, b)
- integer(c_int) function [gsl_sf_beta_e](#) (a, b, result)
- real(c_double) function [fgsl_sf_lnbeta](#) (a, b)
- integer(c_int) function [gsl_sf_lnbeta_e](#) (a, b, result)
- real(c_double) function [fgsl_sf_beta_inc](#) (a, b, x)
- integer(c_int) function [gsl_sf_beta_inc_e](#) (a, b, x, result)
- real(c_double) function [fgsl_sf_gegenpoly_1](#) (lambda, x)
- integer(c_int) function [gsl_sf_gegenpoly_1_e](#) (lambda, x, result)
- real(c_double) function [fgsl_sf_gegenpoly_2](#) (lambda, x)
- integer(c_int) function [gsl_sf_gegenpoly_2_e](#) (lambda, x, result)
- real(c_double) function [fgsl_sf_gegenpoly_3](#) (lambda, x)
- integer(c_int) function [gsl_sf_gegenpoly_3_e](#) (lambda, x, result)
- real(c_double) function [fgsl_sf_gegenpoly_n](#) (n, lambda, x)
- integer(c_int) function [gsl_sf_gegenpoly_n_e](#) (n, lambda, x, result)
- integer(c_int) function [gsl_sf_gegenpoly_array](#) (nmax, lambda, x, result_array)
- real(c_double) function [fgsl_sf_hermite](#) (n, x)
- real(c_double) function [fgsl_sf_hermite_deriv](#) (m, n, x)
- integer(c_int) function [gsl_sf_hermite_deriv_e](#) (m, n, x, result)
- real(c_double) function [fgsl_sf_hermite_prob](#) (n, x)
- real(c_double) function [fgsl_sf_hermite_prob_deriv](#) (m, n, x)
- integer(c_int) function [gsl_sf_hermite_prob_e](#) (n, x, result)
- integer(c_int) function [gsl_sf_hermite_prob_deriv_e](#) (m, n, x, result)
- integer(c_int) function [fgsl_sf_hermite_prob_array](#) (nmax, x, result_array)
- real(c_double) function [fgsl_sf_hermite_prob_series](#) (n, x, a)
- integer(c_int) function [gsl_sf_hermite_prob_series_e](#) (n, x, a, result)
- real(c_double) function [fgsl_sf_hermite_phys](#) (n, x)
- integer(c_int) function [gsl_sf_hermite_e](#) (n, x, result)
- integer(c_int) function [gsl_sf_hermite_phys_e](#) (n, x, result)
- integer(c_int) function [fgsl_sf_hermite_array](#) (nmax, x, result_array)
- integer(c_int) function [fgsl_sf_hermite_array_deriv](#) (m, nmax, x, result_array)
- integer(c_int) function [fgsl_sf_hermite_deriv_array](#) (mmax, n, x, result_array)
- integer(c_int) function [fgsl_sf_hermite_prob_array_deriv](#) (m, nmax, x, result_array)
- integer(c_int) function [fgsl_sf_hermite_prob_deriv_array](#) (mmax, n, x, result_array)
- real(c_double) function [fgsl_sf_hermite_zero](#) (n, s)
- integer(c_int) function [gsl_sf_hermite_zero_e](#) (n, s, result)
- real(c_double) function [fgsl_sf_hermite_prob_zero](#) (n, s)
- integer(c_int) function [gsl_sf_hermite_prob_zero_e](#) (n, s, result)
- integer(c_int) function [fgsl_sf_hermite_phys_array](#) (nmax, x, result_array)
- real(c_double) function [fgsl_sf_hermite_series](#) (n, x, a)
- real(c_double) function [fgsl_sf_hermite_phys_series](#) (n, x, a)
- integer(c_int) function [gsl_sf_hermite_phys_series_e](#) (n, x, a, result)
- integer(c_int) function [gsl_sf_hermite_series_e](#) (n, x, a, result)
- real(c_double) function [fgsl_sf_hermite_func](#) (n, x)
- integer(c_int) function [gsl_sf_hermite_func_e](#) (n, x, result)
- real(c_double) function [fgsl_sf_hermite_func_fast](#) (n, x)
- integer(c_int) function [gsl_sf_hermite_func_fast_e](#) (n, x, result)
- integer(c_int) function [fgsl_sf_hermite_func_array](#) (nmax, x, result_array)
- real(c_double) function [fgsl_sf_hermite_func_series](#) (n, x, a)
- integer(c_int) function [gsl_sf_hermite_func_series_e](#) (n, x, a, result)
- real(c_double) function [fgsl_sf_hyperg_0f1](#) (c, x)
- integer(c_int) function [gsl_sf_hyperg_0f1_e](#) (c, x, result)
- real(c_double) function [fgsl_sf_hyperg_1f1_int](#) (m, n, x)

- integer(c_int) function [gsl_sf_hyperg_1f1_int_e](#) (m, n, x, result)
- real(c_double) function [fgsl_sf_hyperg_1f1](#) (a, b, x)
- integer(c_int) function [gsl_sf_hyperg_1f1_e](#) (a, b, x, result)
- real(c_double) function [fgsl_sf_hyperg_u_int](#) (m, n, x)
- integer(c_int) function [gsl_sf_hyperg_u_int_e](#) (m, n, x, result)
- integer(c_int) function [gsl_sf_hyperg_u_int_e10_e](#) (m, n, x, result)
- real(c_double) function [fgsl_sf_hyperg_u](#) (a, b, x)
- integer(c_int) function [gsl_sf_hyperg_u_e](#) (a, b, x, result)
- integer(c_int) function [gsl_sf_hyperg_u_e10_e](#) (a, b, x, result)
- real(c_double) function [fgsl_sf_hyperg_2f1](#) (a, b, c, x)
- integer(c_int) function [gsl_sf_hyperg_2f1_e](#) (a, b, c, x, result)
- real(c_double) function [fgsl_sf_hyperg_2f1_conj](#) (ar, ai, c, x)
- integer(c_int) function [gsl_sf_hyperg_2f1_conj_e](#) (ar, ai, c, x, result)
- real(c_double) function [fgsl_sf_hyperg_2f1_renorm](#) (a, b, c, x)
- integer(c_int) function [gsl_sf_hyperg_2f1_renorm_e](#) (a, b, c, x, result)
- real(c_double) function [fgsl_sf_hyperg_2f1_conj_renorm](#) (ar, ai, c, x)
- integer(c_int) function [gsl_sf_hyperg_2f1_conj_renorm_e](#) (ar, ai, c, x, result)
- real(c_double) function [fgsl_sf_hyperg_2f0](#) (a, b, x)
- integer(c_int) function [gsl_sf_hyperg_2f0_e](#) (a, b, x, result)
- real(c_double) function [fgsl_sf_laguerre_1](#) (a, x)
- integer(c_int) function [gsl_sf_laguerre_1_e](#) (a, x, result)
- real(c_double) function [fgsl_sf_laguerre_2](#) (a, x)
- integer(c_int) function [gsl_sf_laguerre_2_e](#) (a, x, result)
- real(c_double) function [fgsl_sf_laguerre_3](#) (a, x)
- integer(c_int) function [gsl_sf_laguerre_3_e](#) (a, x, result)
- real(c_double) function [fgsl_sf_laguerre_n](#) (n, a, x)
- integer(c_int) function [gsl_sf_laguerre_n_e](#) (n, a, x, result)
- real(c_double) function [fgsl_sf_lambert_w0](#) (x)
- integer(c_int) function [gsl_sf_lambert_w0_e](#) (x, result)
- real(c_double) function [fgsl_sf_lambert_wm1](#) (x)
- integer(c_int) function [gsl_sf_lambert_wm1_e](#) (x, result)
- real(c_double) function [fgsl_sf_legendre_p1](#) (x)
- integer(c_int) function [gsl_sf_legendre_p1_e](#) (x, result)
- real(c_double) function [fgsl_sf_legendre_p2](#) (x)
- integer(c_int) function [gsl_sf_legendre_p2_e](#) (x, result)
- real(c_double) function [fgsl_sf_legendre_p3](#) (x)
- integer(c_int) function [gsl_sf_legendre_p3_e](#) (x, result)
- real(c_double) function [fgsl_sf_legendre_pl](#) (l, x)
- integer(c_int) function [gsl_sf_legendre_pl_e](#) (l, x, result)
- integer(c_int) function [gsl_sf_legendre_pl_array](#) (lmax, x, res_arr)
- integer(c_int) function [gsl_sf_legendre_pl_deriv_array](#) (lmax, x, res_arr, der_arr)
- real(c_double) function [fgsl_sf_legendre_q0](#) (x)
- integer(c_int) function [gsl_sf_legendre_q0_e](#) (x, result)
- real(c_double) function [fgsl_sf_legendre_q1](#) (x)
- integer(c_int) function [gsl_sf_legendre_q1_e](#) (x, result)
- real(c_double) function [fgsl_sf_legendre_ql](#) (l, x)
- integer(c_int) function [gsl_sf_legendre_ql_e](#) (l, x, result)
- real(c_double) function [fgsl_sf_legendre_plm](#) (l, m, x)
- integer(c_int) function [gsl_sf_legendre_plm_e](#) (l, m, x, result)
- real(c_double) function [fgsl_sf_legendre_sphplm](#) (l, m, x)
- integer(c_int) function [gsl_sf_legendre_sphplm_e](#) (l, m, x, result)
- real(c_double) function [fgsl_sf_conicalp_half](#) (lambda, x)
- integer(c_int) function [gsl_sf_conicalp_half_e](#) (lambda, x, result)
- real(c_double) function [fgsl_sf_conicalp_mhalf](#) (lambda, x)
- integer(c_int) function [gsl_sf_conicalp_mhalf_e](#) (lambda, x, result)

- real(c_double) function [fgsl_sf_conicalp_0](#) (lambda, x)
- integer(c_int) function [gsl_sf_conicalp_0_e](#) (lambda, x, result)
- real(c_double) function [fgsl_sf_conicalp_1](#) (lambda, x)
- integer(c_int) function [gsl_sf_conicalp_1_e](#) (lambda, x, result)
- real(c_double) function [fgsl_sf_conicalp_sph_reg](#) (l, lambda, x)
- integer(c_int) function [gsl_sf_conicalp_sph_reg_e](#) (l, lambda, x, result)
- real(c_double) function [fgsl_sf_conicalp_cyl_reg](#) (l, lambda, x)
- integer(c_int) function [gsl_sf_conicalp_cyl_reg_e](#) (l, lambda, x, result)
- real(c_double) function [fgsl_sf_legendre_h3d_0](#) (lambda, eta)
- integer(c_int) function [gsl_sf_legendre_h3d_0_e](#) (lambda, eta, result)
- real(c_double) function [fgsl_sf_legendre_h3d_1](#) (lambda, eta)
- integer(c_int) function [gsl_sf_legendre_h3d_1_e](#) (lambda, eta, result)
- real(c_double) function [fgsl_sf_legendre_h3d](#) (l, lambda, eta)
- integer(c_int) function [gsl_sf_legendre_h3d_e](#) (l, lambda, eta, result)
- integer(c_int) function [gsl_sf_legendre_h3d_array](#) (lmax, lambda, eta, res_arr)
- real(c_double) function [fgsl_sf_log](#) (x)
- integer(c_int) function [gsl_sf_log_e](#) (x, result)
- real(c_double) function [fgsl_sf_log_abs](#) (x)
- integer(c_int) function [gsl_sf_log_abs_e](#) (x, result)
- integer(c_int) function [gsl_sf_complex_log_e](#) (zr, zi, lnr, theta)
- real(c_double) function [fgsl_sf_log_1plusx](#) (x)
- integer(c_int) function [gsl_sf_log_1plusx_e](#) (x, result)
- real(c_double) function [fgsl_sf_log_1plusx_mx](#) (x)
- integer(c_int) function [gsl_sf_log_1plusx_mx_e](#) (x, result)
- real(c_double) function [fgsl_sf_psi_int](#) (n)
- integer(c_int) function [gsl_sf_psi_int_e](#) (n, result)
- real(c_double) function [fgsl_sf_psi](#) (x)
- integer(c_int) function [gsl_sf_psi_e](#) (x, result)
- real(c_double) function [fgsl_sf_psi_1_int](#) (n)
- integer(c_int) function [gsl_sf_psi_1_int_e](#) (n, result)
- real(c_double) function [fgsl_sf_psi_1](#) (x)
- integer(c_int) function [gsl_sf_psi_1_e](#) (x, result)
- real(c_double) function [fgsl_sf_psi_n](#) (m, x)
- integer(c_int) function [gsl_sf_psi_n_e](#) (m, x, result)
- real(c_double) function [fgsl_sf_psi_1piy](#) (x)
- integer(c_int) function [gsl_sf_psi_1piy_e](#) (x, result)
- real(c_double) function [fgsl_sf_synchrotron_1](#) (x)
- integer(c_int) function [gsl_sf_synchrotron_1_e](#) (x, result)
- real(c_double) function [fgsl_sf_synchrotron_2](#) (x)
- integer(c_int) function [gsl_sf_synchrotron_2_e](#) (x, result)
- real(c_double) function [fgsl_sf_transport_2](#) (x)
- integer(c_int) function [gsl_sf_transport_2_e](#) (x, result)
- real(c_double) function [fgsl_sf_transport_3](#) (x)
- integer(c_int) function [gsl_sf_transport_3_e](#) (x, result)
- real(c_double) function [fgsl_sf_transport_4](#) (x)
- integer(c_int) function [gsl_sf_transport_4_e](#) (x, result)
- real(c_double) function [fgsl_sf_transport_5](#) (x)
- integer(c_int) function [gsl_sf_transport_5_e](#) (x, result)
- real(c_double) function [fgsl_sf_hypot](#) (x, y)
- integer(c_int) function [gsl_sf_hypot_e](#) (x, y, result)
- real(c_double) function [fgsl_sf_sinc](#) (x)
- integer(c_int) function [gsl_sf_sinc_e](#) (x, result)
- integer(c_int) function [gsl_sf_complex_sin_e](#) (zr, zi, szr, szr)
- integer(c_int) function [gsl_sf_complex_cos_e](#) (zr, zi, czr, czi)
- integer(c_int) function [gsl_sf_complex_logsin_e](#) (zr, zi, lszi, lszi)

- `real(c_double)` function [fgsl_sf_lnsinh](#) (x)
- `integer(c_int)` function [gsl_sf_lnsinh_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_incosh](#) (x)
- `integer(c_int)` function [gsl_sf_incosh_e](#) (x, result)
- `integer(c_int)` function [gsl_sf_polar_to_rect](#) (r, theta, x, y)
- `integer(c_int)` function [gsl_sf_rect_to_polar](#) (x, y, r, theta)
- `real(c_double)` function [fgsl_sf_angle_restrict_symm](#) (theta)
- `integer(c_int)` function [gsl_sf_angle_restrict_symm_e](#) (theta)
- `real(c_double)` function [fgsl_sf_angle_restrict_pos](#) (theta)
- `integer(c_int)` function [gsl_sf_angle_restrict_pos_e](#) (theta)
- `integer(c_int)` function [gsl_sf_sin_err_e](#) (x, dx, result)
- `integer(c_int)` function [gsl_sf_cos_err_e](#) (x, dx, result)
- `real(c_double)` function [fgsl_sf_zeta_int](#) (n)
- `integer(c_int)` function [gsl_sf_zeta_int_e](#) (n, result)
- `real(c_double)` function [fgsl_sf_zeta](#) (x)
- `integer(c_int)` function [gsl_sf_zeta_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_zetam1_int](#) (n)
- `integer(c_int)` function [gsl_sf_zetam1_int_e](#) (n, result)
- `real(c_double)` function [fgsl_sf_zetam1](#) (x)
- `integer(c_int)` function [gsl_sf_zetam1_e](#) (x, result)
- `real(c_double)` function [fgsl_sf_hzeta](#) (s, q)
- `integer(c_int)` function [gsl_sf_hzeta_e](#) (s, q, result)
- `real(c_double)` function [fgsl_sf_eta_int](#) (n)
- `integer(c_int)` function [gsl_sf_eta_int_e](#) (n, result)
- `real(c_double)` function [fgsl_sf_eta](#) (x)
- `integer(c_int)` function [gsl_sf_eta_e](#) (x, result)
- `integer(c_int)` function [gsl_sf_legendre_array](#) (norm, lmax, x, result_array)
- `integer(c_int)` function [gsl_sf_legendre_array_e](#) (norm, lmax, x, csphase, result_array)
- `integer(c_int)` function [gsl_sf_legendre_deriv_array](#) (norm, lmax, x, result_array, result_deriv_array)
- `integer(c_int)` function [gsl_sf_legendre_deriv_array_e](#) (norm, lmax, x, csphase, result_array, result_deriv_↵
array)
- `integer(c_int)` function [gsl_sf_legendre_deriv_alt_array](#) (norm, lmax, x, result_array, result_deriv_array)
- `integer(c_int)` function [gsl_sf_legendre_deriv_alt_array_e](#) (norm, lmax, x, csphase, result_array, result_↵
deriv_array)
- `integer(c_int)` function [gsl_sf_legendre_deriv2_array](#) (norm, lmax, x, result_array, result_deriv_array, result_↵
deriv2_array)
- `integer(c_int)` function [gsl_sf_legendre_deriv2_array_e](#) (norm, lmax, x, csphase, result_array, result_deriv_↵
array, result_deriv2_array)
- `integer(c_int)` function [gsl_sf_legendre_deriv2_alt_array](#) (norm, lmax, x, result_array, result_deriv_array, result_deriv2_array)
- `integer(c_int)` function [gsl_sf_legendre_deriv2_alt_array_e](#) (norm, lmax, x, csphase, result_array, result_↵
deriv_array, result_deriv2_array)
- `integer(c_size_t)` function [fgsl_sf_legendre_array_n](#) (lmax)
- `integer(c_size_t)` function [fgsl_sf_legendre_array_index](#) (l, m)
- `integer(c_size_t)` function [fgsl_sf_legendre_nlm](#) (lmax)
- `integer(c_int)` function [gsl_sf_mathieu_a_array](#) (order_min, order_max, qq, work, result_array)
- `integer(c_int)` function [gsl_sf_mathieu_b_array](#) (order_min, order_max, qq, work, result_array)
- `integer(c_int)` function [gsl_sf_mathieu_a_e](#) (order, qq, result)
- `real(c_double)` function [fgsl_sf_mathieu_a](#) (order, qq)
- `integer(c_int)` function [gsl_sf_mathieu_b_e](#) (order, qq, result)
- `real(c_double)` function [fgsl_sf_mathieu_b](#) (order, qq)
- `integer(c_int)` function [fgsl_sf_mathieu_a_coeff](#) (order, qq, aa, coeff)
- `integer(c_int)` function [fgsl_sf_mathieu_b_coeff](#) (order, qq, aa, coeff)
- `type(c_ptr)` function [gsl_sf_mathieu_alloc](#) (nn, qq)
- subroutine [gsl_sf_mathieu_free](#) (workspace)

- integer(c_int) function [gsl_sf_mathieu_ce_e](#) (order, qq, zz, result)
- real(c_double) function [fgsl_sf_mathieu_ce](#) (order, qq, zz)
- integer(c_int) function [gsl_sf_mathieu_se_e](#) (order, qq, zz, result)
- real(c_double) function [fgsl_sf_mathieu_se](#) (order, qq, zz)
- integer(c_int) function [gsl_sf_mathieu_ce_array](#) (nmin, nmax, qq, zz, work, result_array)
- integer(c_int) function [gsl_sf_mathieu_se_array](#) (nmin, nmax, qq, zz, work, result_array)
- integer(c_int) function [gsl_sf_mathieu_mc_e](#) (kind, order, qq, zz, result)
- real(c_double) function [fgsl_sf_mathieu_mc](#) (kind, order, qq, zz)
- integer(c_int) function [gsl_sf_mathieu_ms_e](#) (kind, order, qq, zz, result)
- real(c_double) function [fgsl_sf_mathieu_ms](#) (kind, order, qq, zz)
- integer(c_int) function [gsl_sf_mathieu_mc_array](#) (kind, nmin, nmax, qq, zz, work, result_array)
- integer(c_int) function [gsl_sf_mathieu_ms_array](#) (kind, nmin, nmax, qq, zz, work, result_array)

49.74.1 Function/Subroutine Documentation

49.74.1.1 fgsl_sf_angle_restrict_pos()

```
real(c_double) function fgsl_sf_angle_restrict_pos (  
    real(c_double), value theta )
```

49.74.1.2 fgsl_sf_angle_restrict_symm()

```
real(c_double) function fgsl_sf_angle_restrict_symm (  
    real(c_double), value theta )
```

49.74.1.3 fgsl_sf_atanint()

```
real(c_double) function fgsl_sf_atanint (  
    real(c_double), value x )
```

49.74.1.4 fgsl_sf_bessel_ic0()

```
real(c_double) function fgsl_sf_bessel_ic0 (  
    real(c_double), value x )
```

49.74.1.5 fgsl_sf_bessel_ic0_scaled()

```
real(c_double) function fgsl_sf_bessel_ic0_scaled (  
    real(c_double), value x )
```

49.74.1.6 fgsl_sf_bessel_ic1()

```
real(c_double) function fgsl_sf_bessel_ic1 (  
    real(c_double), value x )
```

49.74.1.7 fgsl_sf_bessel_ic1_scaled()

```
real(c_double) function fgsl_sf_bessel_ic1_scaled (  
    real(c_double), value x )
```

49.74.1.8 fgsl_sf_bessel_icn()

```
real(c_double) function fgsl_sf_bessel_icn (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.9 fgsl_sf_bessel_icn_array()

```
integer(c_int) function fgsl_sf_bessel_icn_array (  
    integer(c_int), value nmin,  
    integer(c_int), value nmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result )
```

49.74.1.10 fgsl_sf_bessel_icn_scaled()

```
real(c_double) function fgsl_sf_bessel_icn_scaled (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.11 fgsl_sf_bessel_icn_scaled_array()

```
integer(c_int) function fgsl_sf_bessel_icn_scaled_array (  
    integer(c_int), value nmin,  
    integer(c_int), value nmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result )
```

49.74.1.12 fgsl_sf_bessel_inu()

```
real(c_double) function fgsl_sf_bessel_inu (  
    real(c_double), value n,  
    real(c_double), value x )
```

49.74.1.13 fgsl_sf_bessel_inu_scaled()

```
real(c_double) function fgsl_sf_bessel_inu_scaled (  
    real(c_double), value n,  
    real(c_double), value x )
```

49.74.1.14 fgsl_sf_bessel_is0_scaled()

```
real(c_double) function fgsl_sf_bessel_is0_scaled (  
    real(c_double), value x )
```

49.74.1.15 fgsl_sf_bessel_is1_scaled()

```
real(c_double) function fgsl_sf_bessel_is1_scaled (  
    real(c_double), value x )
```

49.74.1.16 fgsl_sf_bessel_is2_scaled()

```
real(c_double) function fgsl_sf_bessel_is2_scaled (  
    real(c_double), value x )
```

49.74.1.17 fgsl_sf_bessel_isl_scaled()

```
real(c_double) function fgsl_sf_bessel_isl_scaled (
    integer(c_int), value n,
    real(c_double), value x )
```

49.74.1.18 fgsl_sf_bessel_isl_scaled_array()

```
integer(c_int) function fgsl_sf_bessel_isl_scaled_array (
    integer(c_int), value lmax,
    real(c_double), value x,
    real(c_double), dimension(*), intent(in) result )
```

49.74.1.19 fgsl_sf_bessel_jc0()

```
real(c_double) function fgsl_sf_bessel_jc0 (
    real(c_double), value x )
```

49.74.1.20 fgsl_sf_bessel_jc1()

```
real(c_double) function fgsl_sf_bessel_jc1 (
    real(c_double), value x )
```

49.74.1.21 fgsl_sf_bessel_jcn()

```
real(c_double) function fgsl_sf_bessel_jcn (
    integer(c_int), value n,
    real(c_double), value x )
```

49.74.1.22 fgsl_sf_bessel_jcn_array()

```
integer(c_int) function fgsl_sf_bessel_jcn_array (
    integer(c_int), value nmin,
    integer(c_int), value nmax,
    real(c_double), value x,
    real(c_double), dimension(*), intent(inout) result )
```


49.74.1.23 fgsl_sf_bessel_jnu()

```
real(c_double) function fgsl_sf_bessel_jnu (  
    real(c_double), value n,  
    real(c_double), value x )
```

49.74.1.24 fgsl_sf_bessel_js0()

```
real(c_double) function fgsl_sf_bessel_js0 (  
    real(c_double), value x )
```

49.74.1.25 fgsl_sf_bessel_js1()

```
real(c_double) function fgsl_sf_bessel_js1 (  
    real(c_double), value x )
```

49.74.1.26 fgsl_sf_bessel_js2()

```
real(c_double) function fgsl_sf_bessel_js2 (  
    real(c_double), value x )
```

49.74.1.27 fgsl_sf_bessel_jsl()

```
real(c_double) function fgsl_sf_bessel_jsl (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.28 fgsl_sf_bessel_jsl_array()

```
integer(c_int) function fgsl_sf_bessel_jsl_array (  
    integer(c_int), value lmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result )
```

49.74.1.29 fgsl_sf_bessel_jsl_stepped_array()

```
integer(c_int) function fgsl_sf_bessel_jsl_stepped_array (  
    integer(c_int), value lmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result )
```

49.74.1.30 fgsl_sf_bessel_kc0()

```
real(c_double) function fgsl_sf_bessel_kc0 (  
    real(c_double), value x )
```

49.74.1.31 fgsl_sf_bessel_kc0_scaled()

```
real(c_double) function fgsl_sf_bessel_kc0_scaled (  
    real(c_double), value x )
```

49.74.1.32 fgsl_sf_bessel_kc1()

```
real(c_double) function fgsl_sf_bessel_kc1 (  
    real(c_double), value x )
```

49.74.1.33 fgsl_sf_bessel_kc1_scaled()

```
real(c_double) function fgsl_sf_bessel_kc1_scaled (  
    real(c_double), value x )
```

49.74.1.34 fgsl_sf_bessel_kcn()

```
real(c_double) function fgsl_sf_bessel_kcn (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.35 fgsl_sf_bessel_kcn_array()

```
integer(c_int) function fgsl_sf_bessel_kcn_array (  
    integer(c_int), value nmin,  
    integer(c_int), value nmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result )
```

49.74.1.36 fgsl_sf_bessel_kcn_scaled()

```
real(c_double) function fgsl_sf_bessel_kcn_scaled (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.37 fgsl_sf_bessel_kcn_scaled_array()

```
integer(c_int) function fgsl_sf_bessel_kcn_scaled_array (  
    integer(c_int), value nmin,  
    integer(c_int), value nmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result )
```

49.74.1.38 fgsl_sf_bessel_knu()

```
real(c_double) function fgsl_sf_bessel_knu (  
    real(c_double), value n,  
    real(c_double), value x )
```

49.74.1.39 fgsl_sf_bessel_knu_scaled()

```
real(c_double) function fgsl_sf_bessel_knu_scaled (  
    real(c_double), value n,  
    real(c_double), value x )
```

49.74.1.40 fgsl_sf_bessel_ks0_scaled()

```
real(c_double) function fgsl_sf_bessel_ks0_scaled (  
    real(c_double), value x )
```

49.74.1.41 fgsl_sf_bessel_ks1_scaled()

```
real(c_double) function fgsl_sf_bessel_ks1_scaled (  
    real(c_double), value x )
```

49.74.1.42 fgsl_sf_bessel_ks2_scaled()

```
real(c_double) function fgsl_sf_bessel_ks2_scaled (  
    real(c_double), value x )
```

49.74.1.43 fgsl_sf_bessel_ksl_scaled()

```
real(c_double) function fgsl_sf_bessel_ksl_scaled (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.44 fgsl_sf_bessel_ksl_scaled_array()

```
integer(c_int) function fgsl_sf_bessel_ksl_scaled_array (  
    integer(c_int), value lmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result )
```

49.74.1.45 fgsl_sf_bessel_lnknu()

```
real(c_double) function fgsl_sf_bessel_lnknu (  
    real(c_double), value n,  
    real(c_double), value x )
```

49.74.1.46 fgsl_sf_bessel_yc0()

```
real(c_double) function fgsl_sf_bessel_yc0 (  
    real(c_double), value x )
```

49.74.1.47 fgsl_sf_bessel_yc1()

```
real(c_double) function fgsl_sf_bessel_yc1 (  
    real(c_double), value x )
```

49.74.1.48 fgsl_sf_bessel_ycn()

```
real(c_double) function fgsl_sf_bessel_ycn (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.49 fgsl_sf_bessel_ycn_array()

```
integer(c_int) function fgsl_sf_bessel_ycn_array (  
    integer(c_int), value nmin,  
    integer(c_int), value nmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result )
```

49.74.1.50 fgsl_sf_bessel_ynu()

```
real(c_double) function fgsl_sf_bessel_ynu (  
    real(c_double), value n,  
    real(c_double), value x )
```

49.74.1.51 fgsl_sf_bessel_ys0()

```
real(c_double) function fgsl_sf_bessel_ys0 (  
    real(c_double), value x )
```

49.74.1.52 fgsl_sf_bessel_ys1()

```
real(c_double) function fgsl_sf_bessel_ys1 (  
    real(c_double), value x )
```

49.74.1.53 fgsl_sf_bessel_ys2()

```
real(c_double) function fgsl_sf_bessel_ys2 (  
    real(c_double), value x )
```

49.74.1.54 fgsl_sf_bessel_ysl()

```
real(c_double) function fgsl_sf_bessel_ysl (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.55 fgsl_sf_bessel_ysl_array()

```
integer(c_int) function fgsl_sf_bessel_ysl_array (  
    integer(c_int), value lmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result )
```

49.74.1.56 fgsl_sf_bessel_zero_jc0()

```
real(c_double) function fgsl_sf_bessel_zero_jc0 (  
    integer(c_int), value s )
```

49.74.1.57 fgsl_sf_bessel_zero_jc1()

```
real(c_double) function fgsl_sf_bessel_zero_jc1 (  
    integer(c_int), value s )
```

49.74.1.58 fgsl_sf_bessel_zero_jnu()

```
real(c_double) function fgsl_sf_bessel_zero_jnu (  
    real(c_double), value nu,  
    integer(c_int), value s )
```

49.74.1.59 fgsl_sf_beta()

```
real(c_double) function fgsl_sf_beta (
    real(c_double), value a,
    real(c_double), value b )
```

49.74.1.60 fgsl_sf_beta_inc()

```
real(c_double) function fgsl_sf_beta_inc (
    real(c_double), value a,
    real(c_double), value b,
    real(c_double), value x )
```

49.74.1.61 fgsl_sf_chi()

```
real(c_double) function fgsl_sf_chi (
    real(c_double), value x )
```

49.74.1.62 fgsl_sf_choose()

```
real(c_double) function fgsl_sf_choose (
    integer(c_int), value n,
    integer(c_int), value m )
```

49.74.1.63 fgsl_sf_ci()

```
real(c_double) function fgsl_sf_ci (
    real(c_double), value x )
```

49.74.1.64 fgsl_sf_clausen()

```
real(c_double) function fgsl_sf_clausen (
    real(c_double), value x )
```

49.74.1.65 fgsl_sf_conicalp_0()

```
real(c_double) function fgsl_sf_conicalp_0 (  
    real(c_double), value lambda,  
    real(c_double), value x )
```

49.74.1.66 fgsl_sf_conicalp_1()

```
real(c_double) function fgsl_sf_conicalp_1 (  
    real(c_double), value lambda,  
    real(c_double), value x )
```

49.74.1.67 fgsl_sf_conicalp_cyl_reg()

```
real(c_double) function fgsl_sf_conicalp_cyl_reg (  
    integer(c_int), value l,  
    real(c_double), value lambda,  
    real(c_double), value x )
```

49.74.1.68 fgsl_sf_conicalp_half()

```
real(c_double) function fgsl_sf_conicalp_half (  
    real(c_double), value lambda,  
    real(c_double), value x )
```

49.74.1.69 fgsl_sf_conicalp_mhalf()

```
real(c_double) function fgsl_sf_conicalp_mhalf (  
    real(c_double), value lambda,  
    real(c_double), value x )
```

49.74.1.70 fgsl_sf_conicalp_sph_reg()

```
real(c_double) function fgsl_sf_conicalp_sph_reg (  
    integer(c_int), value l,  
    real(c_double), value lambda,  
    real(c_double), value x )
```


49.74.1.71 fgsl_sf_coupling_3j()

```
real(c_double) function fgsl_sf_coupling_3j (  
    integer(c_int), value two_ja,  
    integer(c_int), value two_jb,  
    integer(c_int), value two_jc,  
    integer(c_int), value two_ma,  
    integer(c_int), value two_mb,  
    integer(c_int), value two_mc )
```

49.74.1.72 fgsl_sf_coupling_6j()

```
real(c_double) function fgsl_sf_coupling_6j (  
    integer(c_int), value two_ja,  
    integer(c_int), value two_jb,  
    integer(c_int), value two_jc,  
    integer(c_int), value two_jd,  
    integer(c_int), value two_je,  
    integer(c_int), value two_jf )
```

49.74.1.73 fgsl_sf_coupling_9j()

```
real(c_double) function fgsl_sf_coupling_9j (  
    integer(c_int), value two_ja,  
    integer(c_int), value two_jb,  
    integer(c_int), value two_jc,  
    integer(c_int), value two_jd,  
    integer(c_int), value two_je,  
    integer(c_int), value two_jf,  
    integer(c_int), value two_jg,  
    integer(c_int), value two_jh,  
    integer(c_int), value two_ji )
```

49.74.1.74 fgsl_sf_dawson()

```
real(c_double) function fgsl_sf_dawson (  
    real(c_double), value x )
```

49.74.1.75 fgsl_sf_debye_1()

```
real(c_double) function fgsl_sf_debye_1 (  
    real(c_double), value x )
```

49.74.1.76 fgsl_sf_debye_2()

```
real(c_double) function fgsl_sf_debye_2 (  
    real(c_double), value x )
```

49.74.1.77 fgsl_sf_debye_3()

```
real(c_double) function fgsl_sf_debye_3 (  
    real(c_double), value x )
```

49.74.1.78 fgsl_sf_debye_4()

```
real(c_double) function fgsl_sf_debye_4 (  
    real(c_double), value x )
```

49.74.1.79 fgsl_sf_debye_5()

```
real(c_double) function fgsl_sf_debye_5 (  
    real(c_double), value x )
```

49.74.1.80 fgsl_sf_debye_6()

```
real(c_double) function fgsl_sf_debye_6 (  
    real(c_double), value x )
```

49.74.1.81 fgsl_sf_dilog()

```
real(c_double) function fgsl_sf_dilog (  
    real(c_double), value x )
```

49.74.1.82 fgsl_sf_doublefact()

```
real(c_double) function fgsl_sf_doublefact (  
    integer(c_int), value n )
```

49.74.1.83 fgsl_sf_elljac_e()

```
integer(c_int) function fgsl_sf_elljac_e (  
    real(c_double), value u,  
    real(c_double), value m,  
    real(c_double) sn,  
    real(c_double) cn,  
    real(c_double) dn )
```

49.74.1.84 fgsl_sf_erf()

```
real(c_double) function fgsl_sf_erf (  
    real(c_double), value x )
```

49.74.1.85 fgsl_sf_erf_q()

```
real(c_double) function fgsl_sf_erf_q (  
    real(c_double), value x )
```

49.74.1.86 fgsl_sf_erf_z()

```
real(c_double) function fgsl_sf_erf_z (  
    real(c_double), value x )
```

49.74.1.87 fgsl_sf_erfc()

```
real(c_double) function fgsl_sf_erfc (  
    real(c_double), value x )
```

49.74.1.88 fgsl_sf_eta()

```
real(c_double) function fgsl_sf_eta (  
    real(c_double), value x )
```

49.74.1.89 fgsl_sf_eta_int()

```
real(c_double) function fgsl_sf_eta_int (
    integer(c_int), value n )
```

49.74.1.90 fgsl_sf_exp()

```
real(c_double) function fgsl_sf_exp (
    real(c_double), value x )
```

49.74.1.91 fgsl_sf_exp_mult()

```
real(c_double) function fgsl_sf_exp_mult (
    real(c_double), value x,
    real(c_double), value y )
```

49.74.1.92 fgsl_sf_expint_3()

```
real(c_double) function fgsl_sf_expint_3 (
    real(c_double), value x )
```

49.74.1.93 fgsl_sf_expint_e1()

```
real(c_double) function fgsl_sf_expint_e1 (
    real(c_double), value x )
```

49.74.1.94 fgsl_sf_expint_e2()

```
real(c_double) function fgsl_sf_expint_e2 (
    real(c_double), value x )
```

49.74.1.95 fgsl_sf_expint_ei()

```
real(c_double) function fgsl_sf_expint_ei (
    real(c_double), value x )
```

49.74.1.96 fgsl_sf_expint_en()

```
real(c_double) function fgsl_sf_expint_en (
    integer(c_int), value n,
    real(c_double), value x )
```

49.74.1.97 fgsl_sf_expm1()

```
real(c_double) function fgsl_sf_expm1 (
    real(c_double), value x )
```

49.74.1.98 fgsl_sf_exprel()

```
real(c_double) function fgsl_sf_exprel (
    real(c_double), value x )
```

49.74.1.99 fgsl_sf_exprel_2()

```
real(c_double) function fgsl_sf_exprel_2 (
    real(c_double), value x )
```

49.74.1.100 fgsl_sf_exprel_n()

```
real(c_double) function fgsl_sf_exprel_n (
    integer(c_int), value n,
    real(c_double), value x )
```

49.74.1.101 fgsl_sf_fact()

```
real(c_double) function fgsl_sf_fact (
    integer(c_int), value n )
```

49.74.1.102 fgsl_sf_fermi_dirac_0()

```
real(c_double) function fgsl_sf_fermi_dirac_0 (
    real(c_double), value x )
```

49.74.1.103 fgsl_sf_fermi_dirac_1()

```
real(c_double) function fgsl_sf_fermi_dirac_1 (  
    real(c_double), value x )
```

49.74.1.104 fgsl_sf_fermi_dirac_2()

```
real(c_double) function fgsl_sf_fermi_dirac_2 (  
    real(c_double), value x )
```

49.74.1.105 fgsl_sf_fermi_dirac_3half()

```
real(c_double) function fgsl_sf_fermi_dirac_3half (  
    real(c_double), value x )
```

49.74.1.106 fgsl_sf_fermi_dirac_half()

```
real(c_double) function fgsl_sf_fermi_dirac_half (  
    real(c_double), value x )
```

49.74.1.107 fgsl_sf_fermi_dirac_inc_0()

```
real(c_double) function fgsl_sf_fermi_dirac_inc_0 (  
    real(c_double), value x,  
    real(c_double), value b )
```

49.74.1.108 fgsl_sf_fermi_dirac_int()

```
real(c_double) function fgsl_sf_fermi_dirac_int (  
    integer(c_int), value i,  
    real(c_double), value x )
```

49.74.1.109 fgsl_sf_fermi_dirac_m1()

```
real(c_double) function fgsl_sf_fermi_dirac_m1 (  
    real(c_double), value x )
```

49.74.1.110 fgsl_sf_fermi_dirac_mhalf()

```
real(c_double) function fgsl_sf_fermi_dirac_mhalf (  
    real(c_double), value x )
```

49.74.1.111 fgsl_sf_gamma()

```
real(c_double) function fgsl_sf_gamma (  
    real(c_double), value x )
```

49.74.1.112 fgsl_sf_gamma_inc()

```
real(c_double) function fgsl_sf_gamma_inc (  
    real(c_double), value a,  
    real(c_double), value x )
```

49.74.1.113 fgsl_sf_gamma_inc_p()

```
real(c_double) function fgsl_sf_gamma_inc_p (  
    real(c_double), value a,  
    real(c_double), value x )
```

49.74.1.114 fgsl_sf_gamma_inc_q()

```
real(c_double) function fgsl_sf_gamma_inc_q (  
    real(c_double), value a,  
    real(c_double), value x )
```

49.74.1.115 fgsl_sf_gammainv()

```
real(c_double) function fgsl_sf_gammainv (  
    real(c_double), value x )
```

49.74.1.116 fgsl_sf_gammastar()

```
real(c_double) function fgsl_sf_gammastar (  
    real(c_double), value x )
```

49.74.1.117 fgsl_sf_gegenpoly_1()

```
real(c_double) function fgsl_sf_gegenpoly_1 (  
    real(c_double), value lambda,  
    real(c_double), value x )
```

49.74.1.118 fgsl_sf_gegenpoly_2()

```
real(c_double) function fgsl_sf_gegenpoly_2 (  
    real(c_double), value lambda,  
    real(c_double), value x )
```

49.74.1.119 fgsl_sf_gegenpoly_3()

```
real(c_double) function fgsl_sf_gegenpoly_3 (  
    real(c_double), value lambda,  
    real(c_double), value x )
```

49.74.1.120 fgsl_sf_gegenpoly_n()

```
real(c_double) function fgsl_sf_gegenpoly_n (  
    integer(c_int), value n,  
    real(c_double), value lambda,  
    real(c_double), value x )
```

49.74.1.121 fgsl_sf_hazard()

```
real(c_double) function fgsl_sf_hazard (  
    real(c_double), value x )
```


49.74.1.122 fgsl_sf_hermite()

```
real(c_double) function fgsl_sf_hermite (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.123 fgsl_sf_hermite_array()

```
integer(c_int) function fgsl_sf_hermite_array (  
    integer(c_int), value nmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result_array )
```

49.74.1.124 fgsl_sf_hermite_array_deriv()

```
integer(c_int) function fgsl_sf_hermite_array_deriv (  
    integer(c_int), value m,  
    integer(c_int), value nmax,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result_array )
```

49.74.1.125 fgsl_sf_hermite_deriv()

```
real(c_double) function fgsl_sf_hermite_deriv (  
    integer(c_int), value m,  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.126 fgsl_sf_hermite_deriv_array()

```
integer(c_int) function fgsl_sf_hermite_deriv_array (  
    integer(c_int), value mmax,  
    integer(c_int), value n,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result_array )
```

49.74.1.127 fgsl_sf_hermite_func()

```
real(c_double) function fgsl_sf_hermite_func (
    integer(c_int), value n,
    real(c_double), value x )
```

49.74.1.128 fgsl_sf_hermite_func_array()

```
integer(c_int) function fgsl_sf_hermite_func_array (
    integer(c_int), value nmax,
    real(c_double), value x,
    real(c_double), dimension(*), intent(inout) result_array )
```

49.74.1.129 fgsl_sf_hermite_func_fast()

```
real(c_double) function fgsl_sf_hermite_func_fast (
    integer(c_int), value n,
    real(c_double), value x )
```

49.74.1.130 fgsl_sf_hermite_func_series()

```
real(c_double) function fgsl_sf_hermite_func_series (
    integer(c_int), value n,
    real(c_double), value x,
    real(c_double), dimension(*), intent(in) a )
```

49.74.1.131 fgsl_sf_hermite_phys()

```
real(c_double) function fgsl_sf_hermite_phys (
    integer(c_int), value n,
    real(c_double), value x )
```

49.74.1.132 fgsl_sf_hermite_phys_array()

```
integer(c_int) function fgsl_sf_hermite_phys_array (
    integer(c_int), value nmax,
    real(c_double), value x,
    real(c_double), dimension(*), intent(inout) result_array )
```

49.74.1.133 fgsl_sf_hermite_phys_series()

```
real(c_double) function fgsl_sf_hermite_phys_series (
    integer(c_int), value n,
    real(c_double), value x,
    real(c_double), dimension(*), intent(in) a )
```

49.74.1.134 fgsl_sf_hermite_prob()

```
real(c_double) function fgsl_sf_hermite_prob (
    integer(c_int), value n,
    real(c_double), value x )
```

49.74.1.135 fgsl_sf_hermite_prob_array()

```
integer(c_int) function fgsl_sf_hermite_prob_array (
    integer(c_int), value nmax,
    real(c_double), value x,
    real(c_double), dimension(*), intent(inout) result_array )
```

49.74.1.136 fgsl_sf_hermite_prob_array_deriv()

```
integer(c_int) function fgsl_sf_hermite_prob_array_deriv (
    integer(c_int), value m,
    integer(c_int), value nmax,
    real(c_double), value x,
    real(c_double), dimension(*), intent(inout) result_array )
```

49.74.1.137 fgsl_sf_hermite_prob_deriv()

```
real(c_double) function fgsl_sf_hermite_prob_deriv (
    integer(c_int), value m,
    integer(c_int), value n,
    real(c_double), value x )
```

49.74.1.138 fgsl_sf_hermite_prob_deriv_array()

```
integer(c_int) function fgsl_sf_hermite_prob_deriv_array (  
    integer(c_int), value mmax,  
    integer(c_int), value n,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(inout) result_array )
```

49.74.1.139 fgsl_sf_hermite_prob_series()

```
real(c_double) function fgsl_sf_hermite_prob_series (  
    integer(c_int), value n,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(in) a )
```

49.74.1.140 fgsl_sf_hermite_prob_zero()

```
real(c_double) function fgsl_sf_hermite_prob_zero (  
    integer(c_int), value n,  
    integer(c_int), value s )
```

49.74.1.141 fgsl_sf_hermite_series()

```
real(c_double) function fgsl_sf_hermite_series (  
    integer(c_int), value n,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(in) a )
```

49.74.1.142 fgsl_sf_hermite_zero()

```
real(c_double) function fgsl_sf_hermite_zero (  
    integer(c_int), value n,  
    integer(c_int), value s )
```

49.74.1.143 fgsl_sf_hydrogenicr()

```
real(c_double) function fgsl_sf_hydrogenicr (  
    integer(c_int), value n,  
    integer(c_int), value l,  
    real(c_double), value z,  
    real(c_double), value r )
```

49.74.1.144 fgsl_sf_hydrogenicr_1()

```
real(c_double) function fgsl_sf_hydrogenicr_1 (  
    real(c_double), value z,  
    real(c_double), value r )
```

49.74.1.145 fgsl_sf_hyperg_0f1()

```
real(c_double) function fgsl_sf_hyperg_0f1 (  
    real(c_double), value c,  
    real(c_double), value x )
```

49.74.1.146 fgsl_sf_hyperg_1f1()

```
real(c_double) function fgsl_sf_hyperg_1f1 (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value x )
```

49.74.1.147 fgsl_sf_hyperg_1f1_int()

```
real(c_double) function fgsl_sf_hyperg_1f1_int (  
    integer(c_int), value m,  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.148 fgsl_sf_hyperg_2f0()

```
real(c_double) function fgsl_sf_hyperg_2f0 (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value x )
```

49.74.1.149 fgsl_sf_hyperg_2f1()

```
real(c_double) function fgsl_sf_hyperg_2f1 (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value c,  
    real(c_double), value x )
```

49.74.1.150 fgsl_sf_hyperg_2f1_conj()

```
real(c_double) function fgsl_sf_hyperg_2f1_conj (  
    real(c_double), value ar,  
    real(c_double), value ai,  
    real(c_double), value c,  
    real(c_double), value x )
```

49.74.1.151 fgsl_sf_hyperg_2f1_conj_renorm()

```
real(c_double) function fgsl_sf_hyperg_2f1_conj_renorm (  
    real(c_double), value ar,  
    real(c_double), value ai,  
    real(c_double), value c,  
    real(c_double), value x )
```

49.74.1.152 fgsl_sf_hyperg_2f1_renorm()

```
real(c_double) function fgsl_sf_hyperg_2f1_renorm (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value c,  
    real(c_double), value x )
```

49.74.1.153 fgsl_sf_hyperg_u()

```
real(c_double) function fgsl_sf_hyperg_u (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value x )
```

49.74.1.154 fgsl_sf_hyperg_u_int()

```
real(c_double) function fgsl_sf_hyperg_u_int (  
    integer(c_int), value m,  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.155 fgsl_sf_hypot()

```
real(c_double) function fgsl_sf_hypot (  
    real(c_double), value x,  
    real(c_double), value y )
```

49.74.1.156 fgsl_sf_hzeta()

```
real(c_double) function fgsl_sf_hzeta (  
    real(c_double), value s,  
    real(c_double), value q )
```

49.74.1.157 fgsl_sf_laguerre_1()

```
real(c_double) function fgsl_sf_laguerre_1 (  
    real(c_double), value a,  
    real(c_double), value x )
```

49.74.1.158 fgsl_sf_laguerre_2()

```
real(c_double) function fgsl_sf_laguerre_2 (  
    real(c_double), value a,  
    real(c_double), value x )
```

49.74.1.159 fgsl_sf_laguerre_3()

```
real(c_double) function fgsl_sf_laguerre_3 (  
    real(c_double), value a,  
    real(c_double), value x )
```

49.74.1.160 fgsl_sf_laguerre_n()

```
real(c_double) function fgsl_sf_laguerre_n (  
    integer(c_int), value n,  
    real(c_double), value a,  
    real(c_double), value x )
```

49.74.1.161 fgsl_sf_lambert_w0()

```
real(c_double) function fgsl_sf_lambert_w0 (  
    real(c_double), value x )
```

49.74.1.162 fgsl_sf_lambert_wm1()

```
real(c_double) function fgsl_sf_lambert_wm1 (  
    real(c_double), value x )
```

49.74.1.163 fgsl_sf_legendre_array_index()

```
integer(c_size_t) function fgsl_sf_legendre_array_index (  
    integer(c_size_t), value l,  
    integer(c_size_t), value m )
```

49.74.1.164 fgsl_sf_legendre_array_n()

```
integer(c_size_t) function fgsl_sf_legendre_array_n (  
    integer(c_size_t), value lmax )
```

49.74.1.165 fgsl_sf_legendre_h3d()

```
real(c_double) function fgsl_sf_legendre_h3d (  
    integer(c_int), value l,  
    real(c_double), value lambda,  
    real(c_double), value eta )
```

49.74.1.166 fgsl_sf_legendre_h3d_0()

```
real(c_double) function fgsl_sf_legendre_h3d_0 (  
    real(c_double), value lambda,  
    real(c_double), value eta )
```


49.74.1.167 fgsl_sf_legendre_h3d_1()

```
real(c_double) function fgsl_sf_legendre_h3d_1 (  
    real(c_double), value lambda,  
    real(c_double), value eta )
```

49.74.1.168 fgsl_sf_legendre_nlm()

```
integer(c_size_t) function fgsl_sf_legendre_nlm (  
    integer(c_size_t), value lmax )
```

49.74.1.169 fgsl_sf_legendre_p1()

```
real(c_double) function fgsl_sf_legendre_p1 (  
    real(c_double), value x )
```

49.74.1.170 fgsl_sf_legendre_p2()

```
real(c_double) function fgsl_sf_legendre_p2 (  
    real(c_double), value x )
```

49.74.1.171 fgsl_sf_legendre_p3()

```
real(c_double) function fgsl_sf_legendre_p3 (  
    real(c_double), value x )
```

49.74.1.172 fgsl_sf_legendre_pl()

```
real(c_double) function fgsl_sf_legendre_pl (  
    integer(c_int), value l,  
    real(c_double), value x )
```

49.74.1.173 fgsl_sf_legendre_plm()

```
real(c_double) function fgsl_sf_legendre_plm (  
    integer(c_int), value l,  
    integer(c_int), value m,  
    real(c_double), value x )
```

49.74.1.174 fgsl_sf_legendre_q0()

```
real(c_double) function fgsl_sf_legendre_q0 (  
    real(c_double), value x )
```

49.74.1.175 fgsl_sf_legendre_q1()

```
real(c_double) function fgsl_sf_legendre_q1 (  
    real(c_double), value x )
```

49.74.1.176 fgsl_sf_legendre_ql()

```
real(c_double) function fgsl_sf_legendre_ql (  
    integer(c_int), value l,  
    real(c_double), value x )
```

49.74.1.177 fgsl_sf_legendre_sphplm()

```
real(c_double) function fgsl_sf_legendre_sphplm (  
    integer(c_int), value l,  
    integer(c_int), value m,  
    real(c_double), value x )
```

49.74.1.178 fgsl_sf_lnbeta()

```
real(c_double) function fgsl_sf_lnbeta (  
    real(c_double), value a,  
    real(c_double), value b )
```

49.74.1.179 fgsl_sf_lchoose()

```
real(c_double) function fgsl_sf_lchoose (
    integer(c_int), value n,
    integer(c_int), value m )
```

49.74.1.180 fgsl_sf_lncosh()

```
real(c_double) function fgsl_sf_lncosh (
    real(c_double), value x )
```

49.74.1.181 fgsl_sf_lndoublefact()

```
real(c_double) function fgsl_sf_lndoublefact (
    integer(c_int), value n )
```

49.74.1.182 fgsl_sf_lnfact()

```
real(c_double) function fgsl_sf_lnfact (
    integer(c_int), value n )
```

49.74.1.183 fgsl_sf_lngamma()

```
real(c_double) function fgsl_sf_lngamma (
    real(c_double), value x )
```

49.74.1.184 fgsl_sf_lnpoch()

```
real(c_double) function fgsl_sf_lnpoch (
    real(c_double), value a,
    real(c_double), value x )
```

49.74.1.185 fgsl_sf_lnsinh()

```
real(c_double) function fgsl_sf_lnsinh (
    real(c_double), value x )
```

49.74.1.186 fgsl_sf_log()

```
real(c_double) function fgsl_sf_log (
    real(c_double), value x )
```

49.74.1.187 fgsl_sf_log_1plusx()

```
real(c_double) function fgsl_sf_log_1plusx (
    real(c_double), value x )
```

49.74.1.188 fgsl_sf_log_1plusx_mx()

```
real(c_double) function fgsl_sf_log_1plusx_mx (
    real(c_double), value x )
```

49.74.1.189 fgsl_sf_log_abs()

```
real(c_double) function fgsl_sf_log_abs (
    real(c_double), value x )
```

49.74.1.190 fgsl_sf_log_erfc()

```
real(c_double) function fgsl_sf_log_erfc (
    real(c_double), value x )
```

49.74.1.191 fgsl_sf_mathieu_a()

```
real(c_double) function fgsl_sf_mathieu_a (
    integer(c_int), value order,
    real(c_double), value qq )
```

49.74.1.192 fgsl_sf_mathieu_a_coeff()

```
integer(c_int) function fgsl_sf_mathieu_a_coeff (  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value aa,  
    real(c_double), dimension(*), intent(inout) coeff )
```

49.74.1.193 fgsl_sf_mathieu_b()

```
real(c_double) function fgsl_sf_mathieu_b (  
    integer(c_int), value order,  
    real(c_double), value qq )
```

49.74.1.194 fgsl_sf_mathieu_b_coeff()

```
integer(c_int) function fgsl_sf_mathieu_b_coeff (  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value aa,  
    real(c_double), dimension(*), intent(inout) coeff )
```

49.74.1.195 fgsl_sf_mathieu_ce()

```
real(c_double) function fgsl_sf_mathieu_ce (  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value zz )
```

49.74.1.196 fgsl_sf_mathieu_mc()

```
real(c_double) function fgsl_sf_mathieu_mc (  
    integer(c_int), value kind,  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value zz )
```

49.74.1.197 fgsl_sf_mathieu_ms()

```
real(c_double) function fgsl_sf_mathieu_ms (  
    integer(c_int), value kind,  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value zz )
```

49.74.1.198 fgsl_sf_mathieu_se()

```
real(c_double) function fgsl_sf_mathieu_se (  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value zz )
```

49.74.1.199 fgsl_sf_poch()

```
real(c_double) function fgsl_sf_poch (  
    real(c_double), value a,  
    real(c_double), value x )
```

49.74.1.200 fgsl_sf_pochrel()

```
real(c_double) function fgsl_sf_pochrel (  
    real(c_double), value a,  
    real(c_double), value x )
```

49.74.1.201 fgsl_sf_psi()

```
real(c_double) function fgsl_sf_psi (  
    real(c_double), value x )
```

49.74.1.202 fgsl_sf_psi_1()

```
real(c_double) function fgsl_sf_psi_1 (  
    real(c_double), value x )
```

49.74.1.203 fgsl_sf_psi_1_int()

```
real(c_double) function fgsl_sf_psi_1_int (
    integer(c_int), value n )
```

49.74.1.204 fgsl_sf_psi_1piy()

```
real(c_double) function fgsl_sf_psi_1piy (
    real(c_double), value x )
```

49.74.1.205 fgsl_sf_psi_int()

```
real(c_double) function fgsl_sf_psi_int (
    integer(c_int), value n )
```

49.74.1.206 fgsl_sf_psi_n()

```
real(c_double) function fgsl_sf_psi_n (
    integer(c_int), value m,
    real(c_double), value x )
```

49.74.1.207 fgsl_sf_shi()

```
real(c_double) function fgsl_sf_shi (
    real(c_double), value x )
```

49.74.1.208 fgsl_sf_si()

```
real(c_double) function fgsl_sf_si (
    real(c_double), value x )
```

49.74.1.209 fgsl_sf_sinc()

```
real(c_double) function fgsl_sf_sinc (
    real(c_double), value x )
```

49.74.1.210 fgsl_sf_synchrotron_1()

```
real(c_double) function fgsl_sf_synchrotron_1 (  
    real(c_double), value x )
```

49.74.1.211 fgsl_sf_synchrotron_2()

```
real(c_double) function fgsl_sf_synchrotron_2 (  
    real(c_double), value x )
```

49.74.1.212 fgsl_sf_taylorcoeff()

```
real(c_double) function fgsl_sf_taylorcoeff (  
    integer(c_int), value n,  
    real(c_double), value x )
```

49.74.1.213 fgsl_sf_transport_2()

```
real(c_double) function fgsl_sf_transport_2 (  
    real(c_double), value x )
```

49.74.1.214 fgsl_sf_transport_3()

```
real(c_double) function fgsl_sf_transport_3 (  
    real(c_double), value x )
```

49.74.1.215 fgsl_sf_transport_4()

```
real(c_double) function fgsl_sf_transport_4 (  
    real(c_double), value x )
```

49.74.1.216 fgsl_sf_transport_5()

```
real(c_double) function fgsl_sf_transport_5 (  
    real(c_double), value x )
```


49.74.1.217 fgsl_sf_zeta()

```
real(c_double) function fgsl_sf_zeta (  
    real(c_double), value x )
```

49.74.1.218 fgsl_sf_zeta_int()

```
real(c_double) function fgsl_sf_zeta_int (  
    integer(c_int), value n )
```

49.74.1.219 fgsl_sf_zetam1()

```
real(c_double) function fgsl_sf_zetam1 (  
    real(c_double), value x )
```

49.74.1.220 fgsl_sf_zetam1_int()

```
real(c_double) function fgsl_sf_zetam1_int (  
    integer(c_int), value n )
```

49.74.1.221 gsl_sf_airy_ai()

```
real(c_double) function gsl_sf_airy_ai (  
    real(c_double), value x,  
    integer(c_int), value mode )
```

49.74.1.222 gsl_sf_airy_ai_deriv()

```
real(c_double) function gsl_sf_airy_ai_deriv (  
    real(c_double), value x,  
    integer(c_int), value mode )
```

49.74.1.223 gsl_sf_airy_ai_deriv_e()

```
integer(c_int) function gsl_sf_airy_ai_deriv_e (  
    real(c_double), value x,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.224 gsl_sf_airy_ai_deriv_scaled()

```
real(c_double) function gsl_sf_airy_ai_deriv_scaled (  
    real(c_double), value x,  
    integer(c_int), value mode )
```

49.74.1.225 gsl_sf_airy_ai_deriv_scaled_e()

```
integer(c_int) function gsl_sf_airy_ai_deriv_scaled_e (  
    real(c_double), value x,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.226 gsl_sf_airy_ai_e()

```
integer(c_int) function gsl_sf_airy_ai_e (  
    real(c_double), value x,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.227 gsl_sf_airy_ai_scaled()

```
real(c_double) function gsl_sf_airy_ai_scaled (  
    real(c_double), value x,  
    integer(c_int), value mode )
```

49.74.1.228 gsl_sf_airy_ai_scaled_e()

```
integer(c_int) function gsl_sf_airy_ai_scaled_e (  
    real(c_double), value x,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.229 gsl_sf_airy_bi()

```
real(c_double) function gsl_sf_airy_bi (
    real(c_double), value x,
    integer(c_int), value mode )
```

49.74.1.230 gsl_sf_airy_bi_deriv()

```
real(c_double) function gsl_sf_airy_bi_deriv (
    real(c_double), value x,
    integer(c_int), value mode )
```

49.74.1.231 gsl_sf_airy_bi_deriv_e()

```
integer(c_int) function gsl_sf_airy_bi_deriv_e (
    real(c_double), value x,
    integer(c_int), value mode,
    type(gsl_sf_result) result )
```

49.74.1.232 gsl_sf_airy_bi_deriv_scaled()

```
real(c_double) function gsl_sf_airy_bi_deriv_scaled (
    real(c_double), value x,
    integer(c_int), value mode )
```

49.74.1.233 gsl_sf_airy_bi_deriv_scaled_e()

```
integer(c_int) function gsl_sf_airy_bi_deriv_scaled_e (
    real(c_double), value x,
    integer(c_int), value mode,
    type(gsl_sf_result) result )
```

49.74.1.234 gsl_sf_airy_bi_e()

```
integer(c_int) function gsl_sf_airy_bi_e (
    real(c_double), value x,
    integer(c_int), value mode,
    type(gsl_sf_result) result )
```

49.74.1.235 gsl_sf_airy_bi_scaled()

```
real(c_double) function gsl_sf_airy_bi_scaled (
    real(c_double), value x,
    integer(c_int), value mode )
```

49.74.1.236 gsl_sf_airy_bi_scaled_e()

```
integer(c_int) function gsl_sf_airy_bi_scaled_e (
    real(c_double), value x,
    integer(c_int), value mode,
    type(gsl_sf_result) result )
```

49.74.1.237 gsl_sf_airy_zero_ai()

```
real(c_double) function gsl_sf_airy_zero_ai (
    integer(c_int), value s )
```

49.74.1.238 gsl_sf_airy_zero_ai_deriv()

```
real(c_double) function gsl_sf_airy_zero_ai_deriv (
    integer(c_int), value s )
```

49.74.1.239 gsl_sf_airy_zero_ai_deriv_e()

```
integer(c_int) function gsl_sf_airy_zero_ai_deriv_e (
    integer(c_int), value s,
    type(gsl_sf_result) result )
```

49.74.1.240 gsl_sf_airy_zero_ai_e()

```
integer(c_int) function gsl_sf_airy_zero_ai_e (
    integer(c_int), value s,
    type(gsl_sf_result) result )
```

49.74.1.241 gsl_sf_airy_zero_bi()

```
real(c_double) function gsl_sf_airy_zero_bi (
    integer(c_int), value s )
```

49.74.1.242 gsl_sf_airy_zero_bi_deriv()

```
real(c_double) function gsl_sf_airy_zero_bi_deriv (
    integer(c_int), value s )
```

49.74.1.243 gsl_sf_airy_zero_bi_deriv_e()

```
integer(c_int) function gsl_sf_airy_zero_bi_deriv_e (
    integer(c_int), value s,
    type(gsl_sf_result) result )
```

49.74.1.244 gsl_sf_airy_zero_bi_e()

```
integer(c_int) function gsl_sf_airy_zero_bi_e (
    integer(c_int), value s,
    type(gsl_sf_result) result )
```

49.74.1.245 gsl_sf_angle_restrict_pos_e()

```
integer(c_int) function gsl_sf_angle_restrict_pos_e (
    real(c_double), intent(inout) theta )
```

49.74.1.246 gsl_sf_angle_restrict_symm_e()

```
integer(c_int) function gsl_sf_angle_restrict_symm_e (
    real(c_double), intent(inout) theta )
```

49.74.1.247 gsl_sf_atanint_e()

```
integer(c_int) function gsl_sf_atanint_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.248 gsl_sf_bessel_ic0_e()

```
integer(c_int) function gsl_sf_bessel_ic0_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.249 gsl_sf_bessel_ic0_scaled_e()

```
integer(c_int) function gsl_sf_bessel_ic0_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.250 gsl_sf_bessel_ic1_e()

```
integer(c_int) function gsl_sf_bessel_ic1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.251 gsl_sf_bessel_ic1_scaled_e()

```
integer(c_int) function gsl_sf_bessel_ic1_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.252 gsl_sf_bessel_icn_e()

```
integer(c_int) function gsl_sf_bessel_icn_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.253 gsl_sf_bessel_icn_scaled_e()

```
integer(c_int) function gsl_sf_bessel_icn_scaled_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.254 gsl_sf_bessel_inu_e()

```
integer(c_int) function gsl_sf_bessel_inu_e (  
    real(c_double), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.255 gsl_sf_bessel_inu_scaled_e()

```
integer(c_int) function gsl_sf_bessel_inu_scaled_e (  
    real(c_double), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.256 gsl_sf_bessel_is0_scaled_e()

```
integer(c_int) function gsl_sf_bessel_is0_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.257 gsl_sf_bessel_is1_scaled_e()

```
integer(c_int) function gsl_sf_bessel_is1_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.258 gsl_sf_bessel_is2_scaled_e()

```
integer(c_int) function gsl_sf_bessel_is2_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.259 gsl_sf_bessel_isl_scaled_e()

```
integer(c_int) function gsl_sf_bessel_isl_scaled_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.260 gsl_sf_bessel_jc0_e()

```
integer(c_int) function gsl_sf_bessel_jc0_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.261 gsl_sf_bessel_jc1_e()

```
integer(c_int) function gsl_sf_bessel_jc1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.262 gsl_sf_bessel_jcn_e()

```
integer(c_int) function gsl_sf_bessel_jcn_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.263 gsl_sf_bessel_jnu_e()

```
integer(c_int) function gsl_sf_bessel_jnu_e (  
    real(c_double), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.264 gsl_sf_bessel_js0_e()

```
integer(c_int) function gsl_sf_bessel_js0_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```


49.74.1.265 gsl_sf_bessel_js1_e()

```
integer(c_int) function gsl_sf_bessel_js1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.266 gsl_sf_bessel_js2_e()

```
integer(c_int) function gsl_sf_bessel_js2_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.267 gsl_sf_bessel_jsl_e()

```
integer(c_int) function gsl_sf_bessel_jsl_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.268 gsl_sf_bessel_kc0_e()

```
integer(c_int) function gsl_sf_bessel_kc0_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.269 gsl_sf_bessel_kc0_scaled_e()

```
integer(c_int) function gsl_sf_bessel_kc0_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.270 gsl_sf_bessel_kc1_e()

```
integer(c_int) function gsl_sf_bessel_kc1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.271 gsl_sf_bessel_kc1_scaled_e()

```
integer(c_int) function gsl_sf_bessel_kc1_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.272 gsl_sf_bessel_kcn_e()

```
integer(c_int) function gsl_sf_bessel_kcn_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.273 gsl_sf_bessel_kcn_scaled_e()

```
integer(c_int) function gsl_sf_bessel_kcn_scaled_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.274 gsl_sf_bessel_knu_e()

```
integer(c_int) function gsl_sf_bessel_knu_e (  
    real(c_double), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.275 gsl_sf_bessel_knu_scaled_e()

```
integer(c_int) function gsl_sf_bessel_knu_scaled_e (  
    real(c_double), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.276 gsl_sf_bessel_ks0_scaled_e()

```
integer(c_int) function gsl_sf_bessel_ks0_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.277 gsl_sf_bessel_ks1_scaled_e()

```
integer(c_int) function gsl_sf_bessel_ks1_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.278 gsl_sf_bessel_ks2_scaled_e()

```
integer(c_int) function gsl_sf_bessel_ks2_scaled_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.279 gsl_sf_bessel_ksl_scaled_e()

```
integer(c_int) function gsl_sf_bessel_ksl_scaled_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.280 gsl_sf_bessel_lnknu_e()

```
integer(c_int) function gsl_sf_bessel_lnknu_e (  
    real(c_double), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.281 gsl_sf_bessel_sequence_jnu_e()

```
integer(c_int) function gsl_sf_bessel_sequence_jnu_e (  
    real(c_double), value nu,  
    integer(c_int), value mode,  
    integer(c_size_t), value size,  
    type(c_ptr), value v )
```

49.74.1.282 gsl_sf_bessel_yc0_e()

```
integer(c_int) function gsl_sf_bessel_yc0_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.283 gsl_sf_bessel_yc1_e()

```
integer(c_int) function gsl_sf_bessel_yc1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.284 gsl_sf_bessel_ycn_e()

```
integer(c_int) function gsl_sf_bessel_ycn_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.285 gsl_sf_bessel_ynu_e()

```
integer(c_int) function gsl_sf_bessel_ynu_e (  
    real(c_double), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.286 gsl_sf_bessel_ys0_e()

```
integer(c_int) function gsl_sf_bessel_ys0_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.287 gsl_sf_bessel_ys1_e()

```
integer(c_int) function gsl_sf_bessel_ys1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.288 gsl_sf_bessel_ys2_e()

```
integer(c_int) function gsl_sf_bessel_ys2_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.289 gsl_sf_bessel_ysl_e()

```
integer(c_int) function gsl_sf_bessel_ysl_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.290 gsl_sf_bessel_zero_jc0_e()

```
integer(c_int) function gsl_sf_bessel_zero_jc0_e (  
    integer(c_int), value s,  
    type(gsl_sf_result) result )
```

49.74.1.291 gsl_sf_bessel_zero_jc1_e()

```
integer(c_int) function gsl_sf_bessel_zero_jc1_e (  
    integer(c_int), value s,  
    type(gsl_sf_result) result )
```

49.74.1.292 gsl_sf_bessel_zero_jnu_e()

```
integer(c_int) function gsl_sf_bessel_zero_jnu_e (  
    real(c_double), value nu,  
    integer(c_int), value s,  
    type(gsl_sf_result) result )
```

49.74.1.293 gsl_sf_beta_e()

```
integer(c_int) function gsl_sf_beta_e (  
    real(c_double), value a,  
    real(c_double), value b,  
    type(gsl_sf_result) result )
```

49.74.1.294 gsl_sf_beta_inc_e()

```
integer(c_int) function gsl_sf_beta_inc_e (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.295 gsl_sf_chi_e()

```
integer(c_int) function gsl_sf_chi_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.296 gsl_sf_choose_e()

```
integer(c_int) function gsl_sf_choose_e (  
    integer(c_int), value n,  
    integer(c_int), value m,  
    type(gsl_sf_result) result )
```

49.74.1.297 gsl_sf_ci_e()

```
integer(c_int) function gsl_sf_ci_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.298 gsl_sf_clausen_e()

```
integer(c_int) function gsl_sf_clausen_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.299 gsl_sf_complex_cos_e()

```
integer(c_int) function gsl_sf_complex_cos_e (  
    real(c_double), value zr,  
    real(c_double), value zi,  
    type(gsl_sf_result) czr,  
    type(gsl_sf_result) czi )
```

49.74.1.300 gsl_sf_complex_dilog_e()

```
integer(c_int) function gsl_sf_complex_dilog_e (  
    real(c_double), value r,  
    real(c_double), value theta,  
    type(gsl_sf_result) result_re,  
    type(gsl_sf_result) result_im )
```

49.74.1.301 gsl_sf_complex_log_e()

```
integer(c_int) function gsl_sf_complex_log_e (  
    real(c_double), value zr,  
    real(c_double), value zi,  
    type(gsl_sf_result) lnr,  
    type(gsl_sf_result) theta )
```

49.74.1.302 gsl_sf_complex_logsin_e()

```
integer(c_int) function gsl_sf_complex_logsin_e (  
    real(c_double), value zr,  
    real(c_double), value zi,  
    type(gsl_sf_result) lszr,  
    type(gsl_sf_result) lszi )
```

49.74.1.303 gsl_sf_complex_sin_e()

```
integer(c_int) function gsl_sf_complex_sin_e (  
    real(c_double), value zr,  
    real(c_double), value zi,  
    type(gsl_sf_result) szr,  
    type(gsl_sf_result) szi )
```

49.74.1.304 gsl_sf_conicalp_0_e()

```
integer(c_int) function gsl_sf_conicalp_0_e (  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.305 gsl_sf_conicalp_1_e()

```
integer(c_int) function gsl_sf_conicalp_1_e (  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.306 gsl_sf_conicalp_cyl_reg_e()

```
integer(c_int) function gsl_sf_conicalp_cyl_reg_e (  
    integer(c_int), value l,  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.307 gsl_sf_conicalp_half_e()

```
integer(c_int) function gsl_sf_conicalp_half_e (  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.308 gsl_sf_conicalp_mhalf_e()

```
integer(c_int) function gsl_sf_conicalp_mhalf_e (  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.309 gsl_sf_conicalp_sph_reg_e()

```
integer(c_int) function gsl_sf_conicalp_sph_reg_e (  
    integer(c_int), value l,  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.310 gsl_sf_cos_err_e()

```
integer(c_int) function gsl_sf_cos_err_e (  
    real(c_double), value x,  
    real(c_double), value dx,  
    type(gsl_sf_result) result )
```


49.74.1.311 gsl_sf_coulomb_cl_array()

```
integer(c_int) function gsl_sf_coulomb_cl_array (  
    real(c_double), value l_min,  
    integer(c_int), value kmax,  
    real(c_double), value eta,  
    type(c_ptr), value cl )
```

49.74.1.312 gsl_sf_coulomb_cl_e()

```
integer(c_int) function gsl_sf_coulomb_cl_e (  
    real(c_double), value l,  
    real(c_double), value eta,  
    type(gsl_sf_result) result )
```

49.74.1.313 gsl_sf_coulomb_wave_f_array()

```
integer(c_int) function gsl_sf_coulomb_wave_f_array (  
    real(c_double), value l_min,  
    integer(c_int), value kmax,  
    real(c_double), value eta,  
    real(c_double), value x,  
    type(c_ptr), value fc_array,  
    real(c_double) f_exponent )
```

49.74.1.314 gsl_sf_coulomb_wave_fg_array()

```
integer(c_int) function gsl_sf_coulomb_wave_fg_array (  
    real(c_double), value l_min,  
    integer(c_int), value kmax,  
    real(c_double), value eta,  
    real(c_double), value x,  
    type(c_ptr), value fc_array,  
    type(c_ptr), value gc_array,  
    real(c_double) f_exponent,  
    real(c_double) g_exponent )
```

49.74.1.315 gsl_sf_coulomb_wave_fg_e()

```
integer(c_int) function gsl_sf_coulomb_wave_fg_e (
    real(c_double), value eta,
    real(c_double), value x,
    real(c_double), value l_f,
    integer(c_int), value k,
    type(gsl_sf_result) f,
    type(gsl_sf_result) fp,
    type(gsl_sf_result) g,
    type(gsl_sf_result) gp,
    real(c_double) exp_f,
    real(c_double) exp_g )
```

49.74.1.316 gsl_sf_coulomb_wave_fgp_array()

```
integer(c_int) function gsl_sf_coulomb_wave_fgp_array (
    real(c_double), value l_min,
    integer(c_int), value kmax,
    real(c_double), value eta,
    real(c_double), value x,
    type(c_ptr), value fc_array,
    type(c_ptr), value fcp_array,
    type(c_ptr), value gc_array,
    type(c_ptr), value gcp_array,
    real(c_double) f_exponent,
    real(c_double) g_exponent )
```

49.74.1.317 gsl_sf_coulomb_wave_sphf_array()

```
integer(c_int) function gsl_sf_coulomb_wave_sphf_array (
    real(c_double), value l_min,
    integer(c_int), value kmax,
    real(c_double), value eta,
    real(c_double), value x,
    type(c_ptr), value fc_array,
    real(c_double) f_exponent )
```

49.74.1.318 gsl_sf_coupling_3j_e()

```
integer(c_int) function gsl_sf_coupling_3j_e (
    integer(c_int), value two_ja,
    integer(c_int), value two_jb,
    integer(c_int), value two_jc,
    integer(c_int), value two_ma,
    integer(c_int), value two_mb,
    integer(c_int), value two_mc,
    type(gsl_sf_result) result )
```

49.74.1.319 gsl_sf_coupling_6j_e()

```
integer(c_int) function gsl_sf_coupling_6j_e (  
    integer(c_int), value two_ja,  
    integer(c_int), value two_jb,  
    integer(c_int), value two_jc,  
    integer(c_int), value two_jd,  
    integer(c_int), value two_je,  
    integer(c_int), value two_jf,  
    type(gsl_sf_result) result )
```

49.74.1.320 gsl_sf_coupling_9j_e()

```
integer(c_int) function gsl_sf_coupling_9j_e (  
    integer(c_int), value two_ja,  
    integer(c_int), value two_jb,  
    integer(c_int), value two_jc,  
    integer(c_int), value two_jd,  
    integer(c_int), value two_je,  
    integer(c_int), value two_jf,  
    integer(c_int), value two_jg,  
    integer(c_int), value two_jh,  
    integer(c_int), value two_ji,  
    type(gsl_sf_result) result )
```

49.74.1.321 gsl_sf_dawson_e()

```
integer(c_int) function gsl_sf_dawson_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.322 gsl_sf_debye_1_e()

```
integer(c_int) function gsl_sf_debye_1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.323 gsl_sf_debye_2_e()

```
integer(c_int) function gsl_sf_debye_2_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.324 gsl_sf_debye_3_e()

```
integer(c_int) function gsl_sf_debye_3_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.325 gsl_sf_debye_4_e()

```
integer(c_int) function gsl_sf_debye_4_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.326 gsl_sf_debye_5_e()

```
integer(c_int) function gsl_sf_debye_5_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.327 gsl_sf_debye_6_e()

```
integer(c_int) function gsl_sf_debye_6_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.328 gsl_sf_dilog_e()

```
integer(c_int) function gsl_sf_dilog_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.329 gsl_sf_doublefact_e()

```
integer(c_int) function gsl_sf_doublefact_e (  
    integer(c_int), value n,  
    type(gsl_sf_result) result )
```

49.74.1.330 gsl_sf_ellint_d()

```
real(c_double) function gsl_sf_ellint_d (  
    real(c_double), value phi,  
    real(c_double), value k,  
    integer(c_int), value mode )
```

49.74.1.331 gsl_sf_ellint_d_e()

```
integer(c_int) function gsl_sf_ellint_d_e (  
    real(c_double), value phi,  
    real(c_double), value k,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.332 gsl_sf_ellint_e()

```
real(c_double) function gsl_sf_ellint_e (  
    real(c_double), value phi,  
    real(c_double), value k,  
    integer(c_int), value mode )
```

49.74.1.333 gsl_sf_ellint_e_e()

```
integer(c_int) function gsl_sf_ellint_e_e (  
    real(c_double), value phi,  
    real(c_double), value k,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.334 gsl_sf_ellint_ecomp()

```
real(c_double) function gsl_sf_ellint_ecomp (  
    real(c_double), value k,  
    integer(c_int), value mode )
```

49.74.1.335 gsl_sf_ellint_ecomp_e()

```
integer(c_int) function gsl_sf_ellint_ecomp_e (  
    real(c_double), value k,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.336 gsl_sf_ellint_f()

```
real(c_double) function gsl_sf_ellint_f (  
    real(c_double), value phi,  
    real(c_double), value k,  
    integer(c_int), value mode )
```

49.74.1.337 gsl_sf_ellint_f_e()

```
integer(c_int) function gsl_sf_ellint_f_e (  
    real(c_double), value phi,  
    real(c_double), value k,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.338 gsl_sf_ellint_kcomp()

```
real(c_double) function gsl_sf_ellint_kcomp (  
    real(c_double), value k,  
    integer(c_int), value mode )
```

49.74.1.339 gsl_sf_ellint_kcomp_e()

```
integer(c_int) function gsl_sf_ellint_kcomp_e (  
    real(c_double), value k,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.340 gsl_sf_ellint_p()

```
real(c_double) function gsl_sf_ellint_p (  
    real(c_double), value phi,  
    real(c_double), value k,  
    real(c_double), value n,  
    integer(c_int), value mode )
```

49.74.1.341 gsl_sf_ellint_p_e()

```
integer(c_int) function gsl_sf_ellint_p_e (  
    real(c_double), value phi,  
    real(c_double), value k,  
    real(c_double), value n,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.342 gsl_sf_ellint_pcomp()

```
real(c_double) function gsl_sf_ellint_pcomp (  
    real(c_double), value k,  
    real(c_double), value n,  
    integer(c_int), value mode )
```

49.74.1.343 gsl_sf_ellint_pcomp_e()

```
integer(c_int) function gsl_sf_ellint_pcomp_e (  
    real(c_double), value k,  
    real(c_double), value n,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.344 gsl_sf_ellint_rc()

```
real(c_double) function gsl_sf_ellint_rc (  
    real(c_double), value x,  
    real(c_double), value y,  
    integer(c_int), value mode )
```

49.74.1.345 gsl_sf_ellint_rc_e()

```
integer(c_int) function gsl_sf_ellint_rc_e (  
    real(c_double), value x,  
    real(c_double), value y,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.346 gsl_sf_ellint_rd()

```
real(c_double) function gsl_sf_ellint_rd (  
    real(c_double), value x,  
    real(c_double), value y,  
    real(c_double), value z,  
    integer(c_int), value mode )
```

49.74.1.347 gsl_sf_ellint_rd_e()

```
integer(c_int) function gsl_sf_ellint_rd_e (  
    real(c_double), value x,  
    real(c_double), value y,  
    real(c_double), value z,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```

49.74.1.348 gsl_sf_ellint_rf()

```
real(c_double) function gsl_sf_ellint_rf (  
    real(c_double), value x,  
    real(c_double), value y,  
    real(c_double), value z,  
    integer(c_int), value mode )
```

49.74.1.349 gsl_sf_ellint_rf_e()

```
integer(c_int) function gsl_sf_ellint_rf_e (  
    real(c_double), value x,  
    real(c_double), value y,  
    real(c_double), value z,  
    integer(c_int), value mode,  
    type(gsl_sf_result) result )
```


49.74.1.350 gsl_sf_ellint_rj()

```
real(c_double) function gsl_sf_ellint_rj (
    real(c_double), value x,
    real(c_double), value y,
    real(c_double), value z,
    real(c_double), value p,
    integer(c_int), value mode )
```

49.74.1.351 gsl_sf_ellint_rj_e()

```
integer(c_int) function gsl_sf_ellint_rj_e (
    real(c_double), value x,
    real(c_double), value y,
    real(c_double), value z,
    real(c_double), value p,
    integer(c_int), value mode,
    type(gsl_sf_result) result )
```

49.74.1.352 gsl_sf_erf_e()

```
integer(c_int) function gsl_sf_erf_e (
    real(c_double), value x,
    type(gsl_sf_result) result )
```

49.74.1.353 gsl_sf_erf_q_e()

```
integer(c_int) function gsl_sf_erf_q_e (
    real(c_double), value x,
    type(gsl_sf_result) result )
```

49.74.1.354 gsl_sf_erf_z_e()

```
integer(c_int) function gsl_sf_erf_z_e (
    real(c_double), value x,
    type(gsl_sf_result) result )
```

49.74.1.355 gsl_sf_erfc_e()

```
integer(c_int) function gsl_sf_erfc_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.356 gsl_sf_eta_e()

```
integer(c_int) function gsl_sf_eta_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.357 gsl_sf_eta_int_e()

```
integer(c_int) function gsl_sf_eta_int_e (  
    integer(c_int), value n,  
    type(gsl_sf_result) result )
```

49.74.1.358 gsl_sf_exp_e()

```
integer(c_int) function gsl_sf_exp_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.359 gsl_sf_exp_e10_e()

```
integer(c_int) function gsl_sf_exp_e10_e (  
    real(c_double), value x,  
    type(gsl_sf_result_e10) result )
```

49.74.1.360 gsl_sf_exp_err_e()

```
integer(c_int) function gsl_sf_exp_err_e (  
    real(c_double), value x,  
    real(c_double), value dx,  
    type(gsl_sf_result) result )
```

49.74.1.361 gsl_sf_exp_err_e10_e()

```
integer(c_int) function gsl_sf_exp_err_e10_e (  
    real(c_double), value x,  
    real(c_double), value dx,  
    type(gsl_sf_result_e10) result )
```

49.74.1.362 gsl_sf_exp_mult_e()

```
integer(c_int) function gsl_sf_exp_mult_e (  
    real(c_double), value x,  
    real(c_double), value y,  
    type(gsl_sf_result) result )
```

49.74.1.363 gsl_sf_exp_mult_e10_e()

```
integer(c_int) function gsl_sf_exp_mult_e10_e (  
    real(c_double), value x,  
    real(c_double), value y,  
    type(gsl_sf_result_e10) result )
```

49.74.1.364 gsl_sf_exp_mult_err_e()

```
integer(c_int) function gsl_sf_exp_mult_err_e (  
    real(c_double), value x,  
    real(c_double), value dx,  
    real(c_double), value y,  
    real(c_double), value dy,  
    type(gsl_sf_result) result )
```

49.74.1.365 gsl_sf_exp_mult_err_e10_e()

```
integer(c_int) function gsl_sf_exp_mult_err_e10_e (  
    real(c_double), value x,  
    real(c_double), value dx,  
    real(c_double), value y,  
    real(c_double), value dy,  
    type(gsl_sf_result_e10) result )
```

49.74.1.366 gsl_sf_expint_3_e()

```
integer(c_int) function gsl_sf_expint_3_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.367 gsl_sf_expint_e1_e()

```
integer(c_int) function gsl_sf_expint_e1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.368 gsl_sf_expint_e2_e()

```
integer(c_int) function gsl_sf_expint_e2_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.369 gsl_sf_expint_ei_e()

```
integer(c_int) function gsl_sf_expint_ei_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.370 gsl_sf_expint_en_e()

```
integer(c_int) function gsl_sf_expint_en_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.371 gsl_sf_expm1_e()

```
integer(c_int) function gsl_sf_expm1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.372 gsl_sf_exprel_2_e()

```
integer(c_int) function gsl_sf_exprel_2_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.373 gsl_sf_exprel_e()

```
integer(c_int) function gsl_sf_exprel_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.374 gsl_sf_exprel_n_e()

```
integer(c_int) function gsl_sf_exprel_n_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.375 gsl_sf_fact_e()

```
integer(c_int) function gsl_sf_fact_e (  
    integer(c_int), value n,  
    type(gsl_sf_result) result )
```

49.74.1.376 gsl_sf_fermi_dirac_0_e()

```
integer(c_int) function gsl_sf_fermi_dirac_0_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.377 gsl_sf_fermi_dirac_1_e()

```
integer(c_int) function gsl_sf_fermi_dirac_1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.378 gsl_sf_fermi_dirac_2_e()

```
integer(c_int) function gsl_sf_fermi_dirac_2_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.379 gsl_sf_fermi_dirac_3half_e()

```
integer(c_int) function gsl_sf_fermi_dirac_3half_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.380 gsl_sf_fermi_dirac_half_e()

```
integer(c_int) function gsl_sf_fermi_dirac_half_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.381 gsl_sf_fermi_dirac_inc_0_e()

```
integer(c_int) function gsl_sf_fermi_dirac_inc_0_e (  
    real(c_double), value x,  
    real(c_double), value b,  
    type(gsl_sf_result) result )
```

49.74.1.382 gsl_sf_fermi_dirac_int_e()

```
integer(c_int) function gsl_sf_fermi_dirac_int_e (  
    integer(c_int), value i,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.383 gsl_sf_fermi_dirac_m1_e()

```
integer(c_int) function gsl_sf_fermi_dirac_m1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.384 gsl_sf_fermi_dirac_mhalf_e()

```
integer(c_int) function gsl_sf_fermi_dirac_mhalf_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.385 gsl_sf_gamma_e()

```
integer(c_int) function gsl_sf_gamma_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.386 gsl_sf_gamma_inc_e()

```
integer(c_int) function gsl_sf_gamma_inc_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.387 gsl_sf_gamma_inc_p_e()

```
integer(c_int) function gsl_sf_gamma_inc_p_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.388 gsl_sf_gamma_inc_q_e()

```
integer(c_int) function gsl_sf_gamma_inc_q_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.389 gsl_sf_gammainv_e()

```
integer(c_int) function gsl_sf_gammainv_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.390 gsl_sf_gammastar_e()

```
integer(c_int) function gsl_sf_gammastar_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.391 gsl_sf_gegenpoly_1_e()

```
integer(c_int) function gsl_sf_gegenpoly_1_e (  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.392 gsl_sf_gegenpoly_2_e()

```
integer(c_int) function gsl_sf_gegenpoly_2_e (  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.393 gsl_sf_gegenpoly_3_e()

```
integer(c_int) function gsl_sf_gegenpoly_3_e (  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.394 gsl_sf_gegenpoly_array()

```
integer(c_int) function gsl_sf_gegenpoly_array (  
    integer(c_int), value nmax,  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(c_ptr), value result_array )
```


49.74.1.395 gsl_sf_gegenpoly_n_e()

```
integer(c_int) function gsl_sf_gegenpoly_n_e (  
    integer(c_int), value n,  
    real(c_double), value lambda,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.396 gsl_sf_hazard_e()

```
integer(c_int) function gsl_sf_hazard_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.397 gsl_sf_hermite_deriv_e()

```
integer(c_int) function gsl_sf_hermite_deriv_e (  
    integer(c_int), value m,  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.398 gsl_sf_hermite_e()

```
integer(c_int) function gsl_sf_hermite_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.399 gsl_sf_hermite_func_e()

```
integer(c_int) function gsl_sf_hermite_func_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.400 gsl_sf_hermite_func_fast_e()

```
integer(c_int) function gsl_sf_hermite_func_fast_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.401 gsl_sf_hermite_func_series_e()

```
integer(c_int) function gsl_sf_hermite_func_series_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(in) a,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.402 gsl_sf_hermite_phys_e()

```
integer(c_int) function gsl_sf_hermite_phys_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.403 gsl_sf_hermite_phys_series_e()

```
integer(c_int) function gsl_sf_hermite_phys_series_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(in) a,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.404 gsl_sf_hermite_prob_deriv_e()

```
integer(c_int) function gsl_sf_hermite_prob_deriv_e (  
    integer(c_int), value m,  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.405 gsl_sf_hermite_prob_e()

```
integer(c_int) function gsl_sf_hermite_prob_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.406 gsl_sf_hermite_prob_series_e()

```
integer(c_int) function gsl_sf_hermite_prob_series_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(in) a,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.407 gsl_sf_hermite_prob_zero_e()

```
integer(c_int) function gsl_sf_hermite_prob_zero_e (  
    integer(c_int), value n,  
    integer(c_int), value s,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.408 gsl_sf_hermite_series_e()

```
integer(c_int) function gsl_sf_hermite_series_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    real(c_double), dimension(*), intent(in) a,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.409 gsl_sf_hermite_zero_e()

```
integer(c_int) function gsl_sf_hermite_zero_e (  
    integer(c_int), value n,  
    integer(c_int), value s,  
    type(gsl_sf_result), intent(inout) result )
```

49.74.1.410 gsl_sf_hydrogenicr_1_e()

```
integer(c_int) function gsl_sf_hydrogenicr_1_e (  
    real(c_double), value z,  
    real(c_double), value r,  
    type(gsl_sf_result) result )
```

49.74.1.411 gsl_sf_hydrogenicr_e()

```
integer(c_int) function gsl_sf_hydrogenicr_e (  
    integer(c_int), value n,  
    integer(c_int), value l,  
    real(c_double), value z,  
    real(c_double), value r,  
    type(gsl_sf_result) result )
```

49.74.1.412 gsl_sf_hyperg_0f1_e()

```
integer(c_int) function gsl_sf_hyperg_0f1_e (  
    real(c_double), value c,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.413 gsl_sf_hyperg_1f1_e()

```
integer(c_int) function gsl_sf_hyperg_1f1_e (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.414 gsl_sf_hyperg_1f1_int_e()

```
integer(c_int) function gsl_sf_hyperg_1f1_int_e (  
    integer(c_int), value m,  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.415 gsl_sf_hyperg_2f0_e()

```
integer(c_int) function gsl_sf_hyperg_2f0_e (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.416 gsl_sf_hyperg_2f1_conj_e()

```
integer(c_int) function gsl_sf_hyperg_2f1_conj_e (  
    real(c_double), value ar,  
    real(c_double), value ai,  
    real(c_double), value c,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.417 gsl_sf_hyperg_2f1_conj_renorm_e()

```
integer(c_int) function gsl_sf_hyperg_2f1_conj_renorm_e (  
    real(c_double), value ar,  
    real(c_double), value ai,  
    real(c_double), value c,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.418 gsl_sf_hyperg_2f1_e()

```
integer(c_int) function gsl_sf_hyperg_2f1_e (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value c,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.419 gsl_sf_hyperg_2f1_renorm_e()

```
integer(c_int) function gsl_sf_hyperg_2f1_renorm_e (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value c,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.420 gsl_sf_hyperg_u_e()

```
integer(c_int) function gsl_sf_hyperg_u_e (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.421 gsl_sf_hyperg_u_e10_e()

```
integer(c_int) function gsl_sf_hyperg_u_e10_e (  
    real(c_double), value a,  
    real(c_double), value b,  
    real(c_double), value x,  
    type(gsl_sf_result_e10) result )
```

49.74.1.422 gsl_sf_hyperg_u_int_e()

```
integer(c_int) function gsl_sf_hyperg_u_int_e (  
    integer(c_int), value m,  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.423 gsl_sf_hyperg_u_int_e10_e()

```
integer(c_int) function gsl_sf_hyperg_u_int_e10_e (  
    integer(c_int), value m,  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result_e10) result )
```

49.74.1.424 gsl_sf_hypot_e()

```
integer(c_int) function gsl_sf_hypot_e (  
    real(c_double), value x,  
    real(c_double), value y,  
    type(gsl_sf_result) result )
```

49.74.1.425 gsl_sf_hzeta_e()

```
integer(c_int) function gsl_sf_hzeta_e (  
    real(c_double), value s,  
    real(c_double), value q,  
    type(gsl_sf_result) result )
```

49.74.1.426 gsl_sf_laguerre_1_e()

```
integer(c_int) function gsl_sf_laguerre_1_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.427 gsl_sf_laguerre_2_e()

```
integer(c_int) function gsl_sf_laguerre_2_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.428 gsl_sf_laguerre_3_e()

```
integer(c_int) function gsl_sf_laguerre_3_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.429 gsl_sf_laguerre_n_e()

```
integer(c_int) function gsl_sf_laguerre_n_e (  
    integer(c_int), value n,  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.430 gsl_sf_lambert_w0_e()

```
integer(c_int) function gsl_sf_lambert_w0_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.431 gsl_sf_lambert_wm1_e()

```
integer(c_int) function gsl_sf_lambert_wm1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.432 gsl_sf_legendre_array()

```
integer(c_int) function gsl_sf_legendre_array (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    type(c_ptr), value result_array )
```

49.74.1.433 gsl_sf_legendre_array_e()

```
integer(c_int) function gsl_sf_legendre_array_e (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    real(c_double), value csphase,  
    type(c_ptr), value result_array )
```

49.74.1.434 gsl_sf_legendre_deriv2_alt_array()

```
integer(c_int) function gsl_sf_legendre_deriv2_alt_array (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    type(c_ptr), value result_array,  
    type(c_ptr), value result_deriv_array,  
    type(c_ptr), value result_deriv2_array )
```


49.74.1.435 gsl_sf_legendre_deriv2_alt_array_e()

```
integer(c_int) function gsl_sf_legendre_deriv2_alt_array_e (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    real(c_double), value csphase,  
    type(c_ptr), value result_array,  
    type(c_ptr), value result_deriv_array,  
    type(c_ptr), value result_deriv2_array )
```

49.74.1.436 gsl_sf_legendre_deriv2_array()

```
integer(c_int) function gsl_sf_legendre_deriv2_array (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    type(c_ptr), value result_array,  
    type(c_ptr), value result_deriv_array,  
    type(c_ptr), value result_deriv2_array )
```

49.74.1.437 gsl_sf_legendre_deriv2_array_e()

```
integer(c_int) function gsl_sf_legendre_deriv2_array_e (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    real(c_double), value csphase,  
    type(c_ptr), value result_array,  
    type(c_ptr), value result_deriv_array,  
    type(c_ptr), value result_deriv2_array )
```

49.74.1.438 gsl_sf_legendre_deriv_alt_array()

```
integer(c_int) function gsl_sf_legendre_deriv_alt_array (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    type(c_ptr), value result_array,  
    type(c_ptr), value result_deriv_array )
```

49.74.1.439 gsl_sf_legendre_deriv_alt_array_e()

```
integer(c_int) function gsl_sf_legendre_deriv_alt_array_e (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    real(c_double), value csphase,  
    type(c_ptr), value result_array,  
    type(c_ptr), value result_deriv_array )
```

49.74.1.440 gsl_sf_legendre_deriv_array()

```
integer(c_int) function gsl_sf_legendre_deriv_array (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    type(c_ptr), value result_array,  
    type(c_ptr), value result_deriv_array )
```

49.74.1.441 gsl_sf_legendre_deriv_array_e()

```
integer(c_int) function gsl_sf_legendre_deriv_array_e (  
    integer(c_int), value norm,  
    integer(c_size_t), value lmax,  
    real(c_double), value x,  
    real(c_double), value csphase,  
    type(c_ptr), value result_array,  
    type(c_ptr), value result_deriv_array )
```

49.74.1.442 gsl_sf_legendre_h3d_0_e()

```
integer(c_int) function gsl_sf_legendre_h3d_0_e (  
    real(c_double), value lambda,  
    real(c_double), value eta,  
    type(gsl_sf_result) result )
```

49.74.1.443 gsl_sf_legendre_h3d_1_e()

```
integer(c_int) function gsl_sf_legendre_h3d_1_e (  
    real(c_double), value lambda,  
    real(c_double), value eta,  
    type(gsl_sf_result) result )
```

49.74.1.444 gsl_sf_legendre_h3d_array()

```
integer(c_int) function gsl_sf_legendre_h3d_array (  
    integer(c_int), value lmax,  
    real(c_double), value lambda,  
    real(c_double), value eta,  
    type(c_ptr), value res_arr )
```

49.74.1.445 gsl_sf_legendre_h3d_e()

```
integer(c_int) function gsl_sf_legendre_h3d_e (  
    integer(c_int), value l,  
    real(c_double), value lambda,  
    real(c_double), value eta,  
    type(gsl_sf_result) result )
```

49.74.1.446 gsl_sf_legendre_p1_e()

```
integer(c_int) function gsl_sf_legendre_p1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.447 gsl_sf_legendre_p2_e()

```
integer(c_int) function gsl_sf_legendre_p2_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.448 gsl_sf_legendre_p3_e()

```
integer(c_int) function gsl_sf_legendre_p3_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.449 gsl_sf_legendre_pl_array()

```
integer(c_int) function gsl_sf_legendre_pl_array (  
    integer(c_int), value lmax,  
    real(c_double), value x,  
    type(c_ptr), value res_arr )
```

49.74.1.450 gsl_sf_legendre_pl_deriv_array()

```
integer(c_int) function gsl_sf_legendre_pl_deriv_array (
    integer(c_int), value lmax,
    real(c_double), value x,
    type(c_ptr), value res_arr,
    type(c_ptr), value der_arr )
```

49.74.1.451 gsl_sf_legendre_pl_e()

```
integer(c_int) function gsl_sf_legendre_pl_e (
    integer(c_int), value l,
    real(c_double), value x,
    type(gsl_sf_result) result )
```

49.74.1.452 gsl_sf_legendre_plm_e()

```
integer(c_int) function gsl_sf_legendre_plm_e (
    integer(c_int), value l,
    integer(c_int), value m,
    real(c_double), value x,
    type(gsl_sf_result) result )
```

49.74.1.453 gsl_sf_legendre_q0_e()

```
integer(c_int) function gsl_sf_legendre_q0_e (
    real(c_double), value x,
    type(gsl_sf_result) result )
```

49.74.1.454 gsl_sf_legendre_q1_e()

```
integer(c_int) function gsl_sf_legendre_q1_e (
    real(c_double), value x,
    type(gsl_sf_result) result )
```

49.74.1.455 gsl_sf_legendre_ql_e()

```
integer(c_int) function gsl_sf_legendre_ql_e (
    integer(c_int), value l,
    real(c_double), value x,
    type(gsl_sf_result) result )
```

49.74.1.456 gsl_sf_legendre_sphplm_e()

```
integer(c_int) function gsl_sf_legendre_sphplm_e (  
    integer(c_int), value l,  
    integer(c_int), value m,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.457 gsl_sf_lnbeta_e()

```
integer(c_int) function gsl_sf_lnbeta_e (  
    real(c_double), value a,  
    real(c_double), value b,  
    type(gsl_sf_result) result )
```

49.74.1.458 gsl_sf_lnchoose_e()

```
integer(c_int) function gsl_sf_lnchoose_e (  
    integer(c_int), value n,  
    integer(c_int), value m,  
    type(gsl_sf_result) result )
```

49.74.1.459 gsl_sf_lncosh_e()

```
integer(c_int) function gsl_sf_lncosh_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.460 gsl_sf_lndoublefact_e()

```
integer(c_int) function gsl_sf_lndoublefact_e (  
    integer(c_int), value n,  
    type(gsl_sf_result) result )
```

49.74.1.461 gsl_sf_lnfact_e()

```
integer(c_int) function gsl_sf_lnfact_e (  
    integer(c_int), value n,  
    type(gsl_sf_result) result )
```

49.74.1.462 gsl_sf_lngamma_complex_e()

```
integer(c_int) function gsl_sf_lngamma_complex_e (  
    real(c_double), value zr,  
    real(c_double), value zi,  
    type(gsl_sf_result) lnr,  
    type(gsl_sf_result) arg )
```

49.74.1.463 gsl_sf_lngamma_e()

```
integer(c_int) function gsl_sf_lngamma_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.464 gsl_sf_lngamma_sgn_e()

```
integer(c_int) function gsl_sf_lngamma_sgn_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result_lg,  
    real(c_double) sgn )
```

49.74.1.465 gsl_sf_lnpoch_e()

```
integer(c_int) function gsl_sf_lnpoch_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.466 gsl_sf_lnpoch_sgn_e()

```
integer(c_int) function gsl_sf_lnpoch_sgn_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result_lg,  
    real(c_double) sgn )
```

49.74.1.467 gsl_sf_lnsinh_e()

```
integer(c_int) function gsl_sf_lnsinh_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.468 gsl_sf_log_1plusx_e()

```
integer(c_int) function gsl_sf_log_1plusx_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.469 gsl_sf_log_1plusx_mx_e()

```
integer(c_int) function gsl_sf_log_1plusx_mx_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.470 gsl_sf_log_abs_e()

```
integer(c_int) function gsl_sf_log_abs_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.471 gsl_sf_log_e()

```
integer(c_int) function gsl_sf_log_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.472 gsl_sf_log_erfc_e()

```
integer(c_int) function gsl_sf_log_erfc_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.473 `gsl_sf_mathieu_a_array()`

```
integer(c_int) function gsl_sf_mathieu_a_array (  
    integer(c_int), value order_min,  
    integer(c_int), value order_max,  
    real(c_double), value qq,  
    type(c_ptr), value work,  
    type(c_ptr), value result_array )
```

49.74.1.474 `gsl_sf_mathieu_a_e()`

```
integer(c_int) function gsl_sf_mathieu_a_e (  
    integer(c_int), value order,  
    real(c_double), value qq,  
    type(c_ptr), value result )
```

49.74.1.475 `gsl_sf_mathieu_alloc()`

```
type(c_ptr) function gsl_sf_mathieu_alloc (  
    integer(c_size_t), value nn,  
    real(c_double), value qq )
```

49.74.1.476 `gsl_sf_mathieu_b_array()`

```
integer(c_int) function gsl_sf_mathieu_b_array (  
    integer(c_int), value order_min,  
    integer(c_int), value order_max,  
    real(c_double), value qq,  
    type(c_ptr), value work,  
    type(c_ptr), value result_array )
```

49.74.1.477 `gsl_sf_mathieu_b_e()`

```
integer(c_int) function gsl_sf_mathieu_b_e (  
    integer(c_int), value order,  
    real(c_double), value qq,  
    type(c_ptr), value result )
```


49.74.1.478 gsl_sf_mathieu_ce_array()

```
integer(c_int) function gsl_sf_mathieu_ce_array (  
    integer(c_int), value nmin,  
    integer(c_int), value nmax,  
    real(c_double), value qq,  
    real(c_double), value zz,  
    type(c_ptr), value work,  
    type(c_ptr), value result_array )
```

49.74.1.479 gsl_sf_mathieu_ce_e()

```
integer(c_int) function gsl_sf_mathieu_ce_e (  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value zz,  
    type(c_ptr), value result )
```

49.74.1.480 gsl_sf_mathieu_free()

```
subroutine gsl_sf_mathieu_free (  
    type(c_ptr), value workspace )
```

49.74.1.481 gsl_sf_mathieu_mc_array()

```
integer(c_int) function gsl_sf_mathieu_mc_array (  
    integer(c_int), value kind,  
    integer(c_int), value nmin,  
    integer(c_int), value nmax,  
    real(c_double), value qq,  
    real(c_double), value zz,  
    type(c_ptr), value work,  
    type(c_ptr), value result_array )
```

49.74.1.482 gsl_sf_mathieu_mc_e()

```
integer(c_int) function gsl_sf_mathieu_mc_e (  
    integer(c_int), value kind,  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value zz,  
    type(c_ptr), value result )
```

49.74.1.483 gsl_sf_mathieu_ms_array()

```
integer(c_int) function gsl_sf_mathieu_ms_array (  
    integer(c_int), value kind,  
    integer(c_int), value nmin,  
    integer(c_int), value nmax,  
    real(c_double), value qq,  
    real(c_double), value zz,  
    type(c_ptr), value work,  
    type(c_ptr), value result_array )
```

49.74.1.484 gsl_sf_mathieu_ms_e()

```
integer(c_int) function gsl_sf_mathieu_ms_e (  
    integer(c_int), value kind,  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value zz,  
    type(c_ptr), value result )
```

49.74.1.485 gsl_sf_mathieu_se_array()

```
integer(c_int) function gsl_sf_mathieu_se_array (  
    integer(c_int), value nmin,  
    integer(c_int), value nmax,  
    real(c_double), value qq,  
    real(c_double), value zz,  
    type(c_ptr), value work,  
    type(c_ptr), value result_array )
```

49.74.1.486 gsl_sf_mathieu_se_e()

```
integer(c_int) function gsl_sf_mathieu_se_e (  
    integer(c_int), value order,  
    real(c_double), value qq,  
    real(c_double), value zz,  
    type(c_ptr), value result )
```

49.74.1.487 gsl_sf_multiply_e()

```
integer(c_int) function gsl_sf_multiply_e (  
    real(c_double), value x,  
    real(c_double), value y,  
    type(gsl_sf_result) result )
```

49.74.1.488 gsl_sf_multiply_err_e()

```
integer(c_int) function gsl_sf_multiply_err_e (  
    real(c_double), value x,  
    real(c_double), value dx,  
    real(c_double), value y,  
    real(c_double), value dy,  
    type(gsl_sf_result) result )
```

49.74.1.489 gsl_sf_poch_e()

```
integer(c_int) function gsl_sf_poch_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.490 gsl_sf_pochrel_e()

```
integer(c_int) function gsl_sf_pochrel_e (  
    real(c_double), value a,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.491 gsl_sf_polar_to_rect()

```
integer(c_int) function gsl_sf_polar_to_rect (  
    real(c_double), value r,  
    real(c_double), value theta,  
    type(gsl_sf_result) x,  
    type(gsl_sf_result) y )
```

49.74.1.492 gsl_sf_psi_1_e()

```
integer(c_int) function gsl_sf_psi_1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.493 gsl_sf_psi_1_int_e()

```
integer(c_int) function gsl_sf_psi_1_int_e (  
    integer(c_int), value n,  
    type(gsl_sf_result) result )
```

49.74.1.494 gsl_sf_psi_1piy_e()

```
integer(c_int) function gsl_sf_psi_1piy_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.495 gsl_sf_psi_e()

```
integer(c_int) function gsl_sf_psi_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.496 gsl_sf_psi_int_e()

```
integer(c_int) function gsl_sf_psi_int_e (  
    integer(c_int), value n,  
    type(gsl_sf_result) result )
```

49.74.1.497 gsl_sf_psi_n_e()

```
integer(c_int) function gsl_sf_psi_n_e (  
    integer(c_int), value m,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.498 gsl_sf_rect_to_polar()

```
integer(c_int) function gsl_sf_rect_to_polar (  
    real(c_double), value x,  
    real(c_double), value y,  
    type(gsl_sf_result) r,  
    type(gsl_sf_result) theta )
```

49.74.1.499 gsl_sf_shi_e()

```
integer(c_int) function gsl_sf_shi_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.500 gsl_sf_si_e()

```
integer(c_int) function gsl_sf_si_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.501 gsl_sf_sin_err_e()

```
integer(c_int) function gsl_sf_sin_err_e (  
    real(c_double), value x,  
    real(c_double), value dx,  
    type(gsl_sf_result) result )
```

49.74.1.502 gsl_sf_sinc_e()

```
integer(c_int) function gsl_sf_sinc_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.503 gsl_sf_synchrotron_1_e()

```
integer(c_int) function gsl_sf_synchrotron_1_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.504 gsl_sf_synchrotron_2_e()

```
integer(c_int) function gsl_sf_synchrotron_2_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.505 gsl_sf_taylorcoeff_e()

```
integer(c_int) function gsl_sf_taylorcoeff_e (  
    integer(c_int), value n,  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.506 gsl_sf_transport_2_e()

```
integer(c_int) function gsl_sf_transport_2_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.507 gsl_sf_transport_3_e()

```
integer(c_int) function gsl_sf_transport_3_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.508 gsl_sf_transport_4_e()

```
integer(c_int) function gsl_sf_transport_4_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.509 gsl_sf_transport_5_e()

```
integer(c_int) function gsl_sf_transport_5_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.510 gsl_sf_zeta_e()

```
integer(c_int) function gsl_sf_zeta_e (  
    real(c_double), value x,  
    type(gsl_sf_result) result )
```

49.74.1.511 gsl_sf_zeta_int_e()

```
integer(c_int) function gsl_sf_zeta_int_e (
    integer(c_int), value n,
    type(gsl_sf_result) result )
```

49.74.1.512 gsl_sf_zetam1_e()

```
integer(c_int) function gsl_sf_zetam1_e (
    real(c_double), value x,
    type(gsl_sf_result) result )
```

49.74.1.513 gsl_sf_zetam1_int_e()

```
integer(c_int) function gsl_sf_zetam1_int_e (
    integer(c_int), value n,
    type(gsl_sf_result) result )
```

49.75 api/splinalg.finc File Reference**Functions/Subroutines**

- type(fgsl_splinalg_itsolve) function [fgsl_splinalg_itsolve_alloc](#) (*T*, *n*, *m*)
- subroutine [fgsl_splinalg_itsolve_free](#) (*w*)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_splinalg_itsolve_name](#) (*w*)
- integer(fgsl_int) function [fgsl_splinalg_itsolve_iterate](#) (*A*, *b*, *tol*, *x*, *w*)
- real(fgsl_double) function [fgsl_splinalg_itsolve_normr](#) (*w*)

49.75.1 Function/Subroutine Documentation**49.75.1.1 fgsl_splinalg_itsolve_alloc()**

```
type(fgsl_splinalg_itsolve) function fgsl_splinalg_itsolve_alloc (
    type(fgsl_splinalg_itsolve_type), intent(in) T,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), intent(in) m )
```

49.75.1.2 fgsl_splinalg_itorsolve_free()

```
subroutine fgsl_splinalg_itorsolve_free (  
    type(fgsl_splinalg_itorsolve), intent(inout) w )
```

49.75.1.3 fgsl_splinalg_itorsolve_iterate()

```
integer(fgsl_int) function fgsl_splinalg_itorsolve_iterate (  
    type(fgsl_spmatrix), intent(in) A,  
    type(fgsl_vector), intent(in) b,  
    real(fgsl_double), intent(in) tol,  
    type(fgsl_vector), intent(inout) x,  
    type(fgsl_splinalg_itorsolve), intent(inout) w )
```

49.75.1.4 fgsl_splinalg_itorsolve_name()

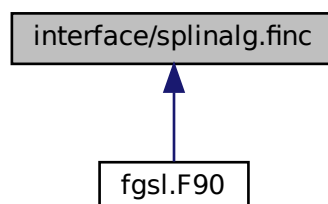
```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_splinalg_itorsolve_name (  
    type(fgsl_splinalg_itorsolve), intent(in) w )
```

49.75.1.5 fgsl_splinalg_itorsolve_normr()

```
real(fgsl_double) function fgsl_splinalg_itorsolve_normr (  
    type(fgsl_splinalg_itorsolve), intent(in) w )
```

49.76 interface/splinalg.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_splinalg_itsolve_alloc](#) (T, n, m)
- subroutine [gsl_splinalg_itsolve_free](#) (w)
- type(c_ptr) function [gsl_splinalg_itsolve_name](#) (w)
- integer(c_int) function [gsl_splinalg_itsolve_iterate](#) (A, b, tol, x, w)
- real(c_double) function [gsl_splinalg_itsolve_normr](#) (w)
- type(c_ptr) function [fgsl_aux_splinalg_itsolve_alloc](#) (i)

49.76.1 Function/Subroutine Documentation

49.76.1.1 fgsl_aux_splinalg_itsolve_alloc()

```
type(c_ptr) function fgsl_aux_splinalg_itsolve_alloc (  
    integer(c_int), value i )
```

49.76.1.2 gsl_splinalg_itsolve_alloc()

```
type(c_ptr) function gsl_splinalg_itsolve_alloc (  
    type(c_ptr), value T,  
    integer(c_size_t), value n,  
    integer(c_size_t), value m )
```

49.76.1.3 gsl_splinalg_itsolve_free()

```
subroutine gsl_splinalg_itsolve_free (  
    type(c_ptr), value w )
```

49.76.1.4 gsl_splinalg_itsolve_iterate()

```
integer(c_int) function gsl_splinalg_itsolve_iterate (  
    type(c_ptr), value A,  
    type(c_ptr), value b,  
    real(c_double), value tol,  
    type(c_ptr), value x,  
    type(c_ptr), value w )
```

49.76.1.5 gsl_splinalg_itsolve_name()

```
type(c_ptr) function gsl_splinalg_itsolve_name (
    type(c_ptr), value w )
```

49.76.1.6 gsl_splinalg_itsolve_normr()

```
real(c_double) function gsl_splinalg_itsolve_normr (
    type(c_ptr), value w )
```

49.77 api/spmatrix.finc File Reference

Functions/Subroutines

- type(fgsl_spmatrix) function [fgsl_spmatrix_alloc](#) (n1, n2)
- type(fgsl_spmatrix) function [fgsl_spmatrix_alloc_nzmax](#) (n1, n2, nzmax, flags)
- subroutine [fgsl_spmatrix_size](#) (m, n1, n2)
- subroutine [fgsl_spmatrix_free](#) (m)
- integer(fgsl_int) function [fgsl_spmatrix_realloc](#) (nzmax, m)
- integer(fgsl_int) function [fgsl_spmatrix_set_zero](#) (m)
- integer(fgsl_size_t) function [fgsl_spmatrix_nnz](#) (m)
- integer(fgsl_int) function [fgsl_spmatrix_memcpy](#) (dest, src)
- real(fgsl_double) function [fgsl_spmatrix_get](#) (m, i, j)
- integer(fgsl_int) function [fgsl_spmatrix_set](#) (m, i, j, x)
- type(fgsl_spmatrix) function [fgsl_spmatrix_compcol](#) (T)
- subroutine [fgsl_spmatrix_cumsum](#) (n, c)
- integer(fgsl_int) function [fgsl_spmatrix_scale](#) (m, x)
- integer(fgsl_int) function [fgsl_spmatrix_scale_columns](#) (a, x)
- integer(fgsl_int) function [fgsl_spmatrix_scale_rows](#) (a, x)
- real(fgsl_double) function [fgsl_spmatrix_norm1](#) (a)
- integer(fgsl_int) function [fgsl_spmatrix_minmax](#) (m, min_out, max_out)
- integer(fgsl_int) function [fgsl_spmatrix_min_index](#) (m, imin, jmin)
- integer(fgsl_int) function [fgsl_spmatrix_csc](#) (dest, src)
- integer(fgsl_int) function [fgsl_spmatrix_csr](#) (dest, src)
- type(fgsl_spmatrix) function [fgsl_spmatrix_compress](#) (src, sptype)
- integer(fgsl_int) function [fgsl_spmatrix_add](#) (c, a, b)
- integer(fgsl_int) function [fgsl_spmatrix_dense_add](#) (a, b)
- integer(fgsl_int) function [fgsl_spmatrix_add_to_dense](#) (a, b)
- integer(fgsl_int) function [fgsl_spmatrix_dense_sub](#) (a, b)
- integer(fgsl_int) function [fgsl_spmatrix_d2sp](#) (S, A)
- integer(fgsl_int) function [fgsl_spmatrix_sp2d](#) (A, S)
- integer(fgsl_int) function [fgsl_spmatrix_equal](#) (a, b)
- integer(fgsl_int) function [fgsl_spmatrix_transpose_memcpy](#) (dest, src)
- integer(fgsl_int) function [fgsl_spmatrix_transpose](#) (m)
- integer(fgsl_int) function [fgsl_splblas_dgemv](#) (transa, alpha, a, x, beta, y)
- integer(fgsl_int) function [fgsl_splblas_dgemm](#) (alpha, a, b, c)
- integer(fgsl_int) function [fgsl_spmatrix_fwrite](#) (stream, m)
- integer(fgsl_int) function [fgsl_spmatrix_fread](#) (stream, m)
- integer(fgsl_int) function [fgsl_spmatrix_fprintf](#) (stream, m, format)
- type(fgsl_spmatrix) function [fgsl_spmatrix_fscanf](#) (stream)
- subroutine [fgsl_spmatrix_getfields](#) (m, i, p, d)

49.77.1 Function/Subroutine Documentation

49.77.1.1 fgsl_spblas_dgemm()

```
integer(fgsl_int) function fgsl_spblas_dgemm (  
    real(fgsl_double), intent(in) alpha,  
    type(fgsl_spmatrix), intent(in) a,  
    type(fgsl_spmatrix), intent(in) b,  
    type(fgsl_spmatrix), intent(inout) c )
```

49.77.1.2 fgsl_spblas_dgemv()

```
integer(fgsl_int) function fgsl_spblas_dgemv (  
    integer(fgsl_int), intent(in) transa,  
    real(fgsl_double), intent(in) alpha,  
    type(fgsl_spmatrix), intent(in) a,  
    type(fgsl_vector), intent(in) x,  
    real(fgsl_double), intent(in) beta,  
    type(fgsl_vector), intent(inout) y )
```

49.77.1.3 fgsl_spmatrix_add()

```
integer(fgsl_int) function fgsl_spmatrix_add (  
    type(fgsl_spmatrix), intent(inout) c,  
    type(fgsl_spmatrix), intent(in) a,  
    type(fgsl_spmatrix), intent(in) b )
```

49.77.1.4 fgsl_spmatrix_add_to_dense()

```
integer(fgsl_int) function fgsl_spmatrix_add_to_dense (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_spmatrix), intent(in) b )
```

49.77.1.5 fgsl_spmatrix_alloc()

```
type(fgsl_spmatrix) function fgsl_spmatrix_alloc (  
    integer(fgsl_size_t), intent(in) n1,  
    integer(fgsl_size_t), intent(in) n2 )
```

49.77.1.6 fgsl_spmatrix_alloc_nzmax()

```

type(fgsl_spmatrix) function fgsl_spmatrix_alloc_nzmax (
    integer(fgsl_size_t), intent(in) n1,
    integer(fgsl_size_t), intent(in) n2,
    integer(fgsl_size_t), intent(in) nzmax,
    integer(fgsl_size_t), intent(in) flags )

```

49.77.1.7 fgsl_spmatrix_compcol()

```

type(fgsl_spmatrix) function fgsl_spmatrix_compcol (
    type(fgsl_spmatrix), intent(in) T )

```

49.77.1.8 fgsl_spmatrix_compress()

```

type(fgsl_spmatrix) function fgsl_spmatrix_compress (
    type(fgsl_spmatrix), intent(in) src,
    integer(fgsl_int), intent(in) sptype )

```

49.77.1.9 fgsl_spmatrix_csc()

```

integer(fgsl_int) function fgsl_spmatrix_csc (
    type(fgsl_spmatrix), intent(inout) dest,
    type(fgsl_spmatrix), intent(in) src )

```

49.77.1.10 fgsl_spmatrix_csr()

```

integer(fgsl_int) function fgsl_spmatrix_csr (
    type(fgsl_spmatrix), intent(inout) dest,
    type(fgsl_spmatrix), intent(in) src )

```

49.77.1.11 fgsl_spmatrix_cumsum()

```

subroutine fgsl_spmatrix_cumsum (
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_size_t), dimension(:), intent(inout), target, contiguous c )

```

49.77.1.12 fgsl_spmatrix_d2sp()

```
integer(fgsl_int) function fgsl_spmatrix_d2sp (  
    type(fgsl_spmatrix), intent(inout) S,  
    type(fgsl_matrix), intent(in) A )
```

49.77.1.13 fgsl_spmatrix_dense_add()

```
integer(fgsl_int) function fgsl_spmatrix_dense_add (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_spmatrix), intent(in) b )
```

49.77.1.14 fgsl_spmatrix_dense_sub()

```
integer(fgsl_int) function fgsl_spmatrix_dense_sub (  
    type(fgsl_matrix), intent(inout) a,  
    type(fgsl_spmatrix), intent(in) b )
```

49.77.1.15 fgsl_spmatrix_equal()

```
integer(fgsl_int) function fgsl_spmatrix_equal (  
    type(fgsl_spmatrix), intent(in) a,  
    type(fgsl_spmatrix), intent(in) b )
```

49.77.1.16 fgsl_spmatrix_fprintf()

```
integer(fgsl_int) function fgsl_spmatrix_fprintf (  
    type(fgsl_file) stream,  
    type(fgsl_spmatrix), intent(in) m,  
    character(kind=fgsl_char, len=*), intent(in) format )
```

49.77.1.17 fgsl_spmatrix_fread()

```
integer(fgsl_int) function fgsl_spmatrix_fread (  
    type(fgsl_file) stream,  
    type(fgsl_spmatrix), intent(inout) m )
```

49.77.1.18 fgsl_spmatrix_free()

```
subroutine fgsl_spmatrix_free (  
    type(fgsl_spmatrix), intent(in) m )
```

49.77.1.19 fgsl_spmatrix_fscanf()

```
type(fgsl_spmatrix) function fgsl_spmatrix_fscanf (  
    type(fgsl_file) stream )
```

49.77.1.20 fgsl_spmatrix_fwrite()

```
integer(fgsl_int) function fgsl_spmatrix_fwrite (  
    type(fgsl_file) stream,  
    type(fgsl_spmatrix), intent(in) m )
```

49.77.1.21 fgsl_spmatrix_get()

```
real(fgsl_double) function fgsl_spmatrix_get (  
    type(fgsl_spmatrix), intent(in) m,  
    integer(fgsl_size_t), intent(in) i,  
    integer(fgsl_size_t), intent(in) j )
```

49.77.1.22 fgsl_spmatrix_getfields()

```
subroutine fgsl_spmatrix_getfields (  
    type(fgsl_spmatrix), intent(in) m,  
    integer(fgsl_int), dimension(:), intent(inout), pointer i,  
    integer(fgsl_int), dimension(:), intent(inout), pointer p,  
    real(fgsl_double), dimension(:), intent(inout), pointer d )
```

49.77.1.23 fgsl_spmatrix_memcpy()

```
integer(fgsl_int) function fgsl_spmatrix_memcpy (  
    type(fgsl_spmatrix), intent(inout) dest,  
    type(fgsl_spmatrix), intent(in) src )
```

49.77.1.24 fgsl_spmatrix_min_index()

```
integer(fgsl_int) function fgsl_spmatrix_min_index (  
    type(fgsl_spmatrix), intent(in) m,  
    real(fgsl_double), intent(out) imin,  
    real(fgsl_double), intent(out) jmin )
```

49.77.1.25 fgsl_spmatrix_minmax()

```
integer(fgsl_int) function fgsl_spmatrix_minmax (  
    type(fgsl_spmatrix), intent(in) m,  
    real(fgsl_double), intent(out) min_out,  
    real(fgsl_double), intent(out) max_out )
```

49.77.1.26 fgsl_spmatrix_nnz()

```
integer(fgsl_size_t) function fgsl_spmatrix_nnz (  
    type(fgsl_spmatrix), intent(in) m )
```

49.77.1.27 fgsl_spmatrix_norm1()

```
real(fgsl_double) function fgsl_spmatrix_norm1 (  
    type(fgsl_spmatrix), intent(in) a )
```

49.77.1.28 fgsl_spmatrix_realloc()

```
integer(fgsl_int) function fgsl_spmatrix_realloc (  
    integer(fgsl_size_t), intent(in) nzmax,  
    type(fgsl_spmatrix), intent(inout) m )
```

49.77.1.29 fgsl_spmatrix_scale()

```
integer(fgsl_int) function fgsl_spmatrix_scale (  
    type(fgsl_spmatrix), intent(inout) m,  
    real(fgsl_double), intent(in) x )
```

49.77.1.30 fgsl_spmatrix_scale_columns()

```
integer(fgsl_int) function fgsl_spmatrix_scale_columns (
    type(fgsl_spmatrix), intent(inout) a,
    type(fgsl_vector), intent(in) x )
```

49.77.1.31 fgsl_spmatrix_scale_rows()

```
integer(fgsl_int) function fgsl_spmatrix_scale_rows (
    type(fgsl_spmatrix), intent(inout) a,
    type(fgsl_vector), intent(in) x )
```

49.77.1.32 fgsl_spmatrix_set()

```
integer(fgsl_int) function fgsl_spmatrix_set (
    type(fgsl_spmatrix), intent(in) m,
    integer(fgsl_size_t), intent(in) i,
    integer(fgsl_size_t), intent(in) j,
    real(fgsl_double), intent(in) x )
```

49.77.1.33 fgsl_spmatrix_set_zero()

```
integer(fgsl_int) function fgsl_spmatrix_set_zero (
    type(fgsl_spmatrix), intent(inout) m )
```

49.77.1.34 fgsl_spmatrix_size()

```
subroutine fgsl_spmatrix_size (
    type(fgsl_spmatrix), intent(in) m,
    integer(fgsl_size_t), intent(inout) n1,
    integer(fgsl_size_t), intent(inout) n2 )
```

49.77.1.35 fgsl_spmatrix_sp2d()

```
integer(fgsl_int) function fgsl_spmatrix_sp2d (
    type(fgsl_matrix), intent(inout) A,
    type(fgsl_spmatrix), intent(in) S )
```


49.77.1.36 fgsl_spmatrix_transpose()

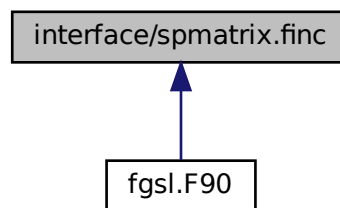
```
integer(fgsl_int) function fgsl_spmatrix_transpose (
    type(fgsl_spmatrix), intent(inout) m )
```

49.77.1.37 fgsl_spmatrix_transpose_memcpy()

```
integer(fgsl_int) function fgsl_spmatrix_transpose_memcpy (
    type(fgsl_spmatrix), intent(inout) dest,
    type(fgsl_spmatrix), intent(in) src )
```

49.78 interface/spmatrix.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- type(c_ptr) function [gsl_spmatrix_alloc](#) (n1, n2)
- type(c_ptr) function [gsl_spmatrix_alloc_nzmax](#) (n1, n2, nzmax, flags)
- subroutine [gsl_spmatrix_size](#) (m, n1, n2)
- subroutine [gsl_spmatrix_free](#) (m)
- integer(c_int) function [gsl_spmatrix_realloc](#) (nzmax, m)
- integer(c_int) function [gsl_spmatrix_set_zero](#) (m)
- integer(c_size_t) function [gsl_spmatrix_nnz](#) (m)
- integer(c_int) function [gsl_spmatrix_memcpy](#) (dest, src)
- real(c_double) function [gsl_spmatrix_get](#) (m, i, j)
- integer(c_int) function [gsl_spmatrix_set](#) (m, i, j, x)
- type(c_ptr) function [gsl_spmatrix_compcol](#) (T)
- subroutine [gsl_spmatrix_cumsum](#) (n, c)
- integer(c_int) function [gsl_spmatrix_scale](#) (m, x)
- integer(c_int) function [gsl_spmatrix_scale_columns](#) (a, x)
- integer(c_int) function [gsl_spmatrix_scale_rows](#) (a, x)
- real(c_double) function [gsl_spmatrix_norm1](#) (a)
- integer(c_int) function [gsl_spmatrix_minmax](#) (m, min_out, max_out)

- integer(c_int) function [gsl_spmatrix_min_index](#) (m, imin, jmin)
- integer(c_int) function [gsl_spmatrix_add](#) (c, a, b)
- integer(c_int) function [gsl_spmatrix_dense_add](#) (a, b)
- integer(c_int) function [gsl_spmatrix_dense_sub](#) (a, b)
- integer(c_int) function [gsl_spmatrix_csc](#) (dest, src)
- integer(c_int) function [gsl_spmatrix_csr](#) (dest, src)
- type(c_ptr) function [gsl_spmatrix_compress](#) (src, sptype)
- integer(c_int) function [gsl_spmatrix_d2sp](#) (S, A)
- integer(c_int) function [gsl_spmatrix_sp2d](#) (A, S)
- integer(c_int) function [gsl_spmatrix_equal](#) (a, b)
- integer(c_int) function [gsl_spmatrix_transpose_memcpy](#) (dest, src)
- integer(c_int) function [gsl_spmatrix_transpose](#) (m)
- integer(c_int) function [gsl_spblas_dgemv](#) (transa, alpha, a, x, beta, y)
- integer(c_int) function [gsl_spblas_dgemm](#) (alpha, a, b, c)
- integer(c_int) function [gsl_spmatrix_fwrite](#) (stream, m)
- integer(c_int) function [gsl_spmatrix_fread](#) (stream, m)
- integer(c_int) function [gsl_spmatrix_fprintf](#) (stream, m, format)
- type(c_ptr) function [gsl_spmatrix_fscanf](#) (stream)
- subroutine [gsl_aux_spmatrix_getfields](#) (m, ip, dp, pp, psize)

49.78.1 Function/Subroutine Documentation

49.78.1.1 [gsl_aux_spmatrix_getfields\(\)](#)

```
subroutine gsl_aux_spmatrix_getfields (
    type(c_ptr), value m,
    type(c_ptr) ip,
    type(c_ptr) dp,
    type(c_ptr) pp,
    integer(c_size_t) psize )
```

49.78.1.2 [gsl_spblas_dgemm\(\)](#)

```
integer(c_int) function gsl_spblas_dgemm (
    real(c_double), value alpha,
    type(c_ptr), value a,
    type(c_ptr), value b,
    type(c_ptr), value c )
```

49.78.1.3 gsl_spblas_dgemv()

```
integer(c_int) function gsl_spblas_dgemv (  
    integer(c_int), value transa,  
    real(c_double), value alpha,  
    type(c_ptr), value a,  
    type(c_ptr), value x,  
    real(c_double), value beta,  
    type(c_ptr), value y )
```

49.78.1.4 gsl_spmatrix_add()

```
integer(c_int) function gsl_spmatrix_add (  
    type(c_ptr), value c,  
    type(c_ptr), value a,  
    type(c_ptr), value b )
```

49.78.1.5 gsl_spmatrix_alloc()

```
type(c_ptr) function gsl_spmatrix_alloc (  
    integer(c_size_t), value n1,  
    integer(c_size_t), value n2 )
```

49.78.1.6 gsl_spmatrix_alloc_nzmax()

```
type(c_ptr) function gsl_spmatrix_alloc_nzmax (  
    integer(c_size_t), value n1,  
    integer(c_size_t), value n2,  
    integer(c_size_t), value nzmax,  
    integer(c_size_t), value flags )
```

49.78.1.7 gsl_spmatrix_compcol()

```
type(c_ptr) function gsl_spmatrix_compcol (  
    type(c_ptr), value T )
```

49.78.1.8 `gsl_spmatrix_compress()`

```
type(c_ptr) function gsl_spmatrix_compress (
    type(c_ptr), value src,
    integer(c_int), value sptype )
```

49.78.1.9 `gsl_spmatrix_csc()`

```
integer(c_int) function gsl_spmatrix_csc (
    type(c_ptr), value dest,
    type(c_ptr), value src )
```

49.78.1.10 `gsl_spmatrix_csr()`

```
integer(c_int) function gsl_spmatrix_csr (
    type(c_ptr), value dest,
    type(c_ptr), value src )
```

49.78.1.11 `gsl_spmatrix_cumsum()`

```
subroutine gsl_spmatrix_cumsum (
    integer(c_size_t), value n,
    type(c_ptr), value c )
```

49.78.1.12 `gsl_spmatrix_d2sp()`

```
integer(c_int) function gsl_spmatrix_d2sp (
    type(c_ptr), value S,
    type(c_ptr), value A )
```

49.78.1.13 `gsl_spmatrix_dense_add()`

```
integer(c_int) function gsl_spmatrix_dense_add (
    type(c_ptr), value a,
    type(c_ptr), value b )
```

49.78.1.14 gsl_spmatrix_dense_sub()

```
integer(c_int) function gsl_spmatrix_dense_sub (  
    type(c_ptr), value a,  
    type(c_ptr), value b )
```

49.78.1.15 gsl_spmatrix_equal()

```
integer(c_int) function gsl_spmatrix_equal (  
    type(c_ptr), value a,  
    type(c_ptr), value b )
```

49.78.1.16 gsl_spmatrix_fprintf()

```
integer(c_int) function gsl_spmatrix_fprintf (  
    type(c_ptr), value stream,  
    type(c_ptr), value m,  
    character(kind=c_char), dimension(*), intent(in) format )
```

49.78.1.17 gsl_spmatrix_fread()

```
integer(c_int) function gsl_spmatrix_fread (  
    type(c_ptr), value stream,  
    type(c_ptr), value m )
```

49.78.1.18 gsl_spmatrix_free()

```
subroutine gsl_spmatrix_free (  
    type(c_ptr), value m )
```

49.78.1.19 gsl_spmatrix_fscanf()

```
type(c_ptr) function gsl_spmatrix_fscanf (  
    type(c_ptr), value stream )
```

49.78.1.20 gsl_spmatrix_fwrite()

```
integer(c_int) function gsl_spmatrix_fwrite (  
    type(c_ptr), value stream,  
    type(c_ptr), value m )
```

49.78.1.21 gsl_spmatrix_get()

```
real(c_double) function gsl_spmatrix_get (  
    type(c_ptr), value m,  
    integer(c_size_t), value i,  
    integer(c_size_t), value j )
```

49.78.1.22 gsl_spmatrix_memcpy()

```
integer(c_int) function gsl_spmatrix_memcpy (  
    type(c_ptr), value dest,  
    type(c_ptr), value src )
```

49.78.1.23 gsl_spmatrix_min_index()

```
integer(c_int) function gsl_spmatrix_min_index (  
    type(c_ptr), value m,  
    real(c_double) imin,  
    real(c_double) jmin )
```

49.78.1.24 gsl_spmatrix_minmax()

```
integer(c_int) function gsl_spmatrix_minmax (  
    type(c_ptr), value m,  
    real(c_double) min_out,  
    real(c_double) max_out )
```

49.78.1.25 gsl_spmatrix_nnz()

```
integer(c_size_t) function gsl_spmatrix_nnz (  
    type(c_ptr), value m )
```

49.78.1.26 gsl_spmatrix_norm1()

```
real(c_double) function gsl_spmatrix_norm1 (  
    type(c_ptr), value a )
```

49.78.1.27 gsl_spmatrix_realloc()

```
integer(c_int) function gsl_spmatrix_realloc (  
    integer(c_size_t), value nzmax,  
    type(c_ptr), value m )
```

49.78.1.28 gsl_spmatrix_scale()

```
integer(c_int) function gsl_spmatrix_scale (  
    type(c_ptr), value m,  
    real(c_double), value x )
```

49.78.1.29 gsl_spmatrix_scale_columns()

```
integer(c_int) function gsl_spmatrix_scale_columns (  
    type(c_ptr), value a,  
    type(c_ptr), value x )
```

49.78.1.30 gsl_spmatrix_scale_rows()

```
integer(c_int) function gsl_spmatrix_scale_rows (  
    type(c_ptr), value a,  
    type(c_ptr), value x )
```

49.78.1.31 gsl_spmatrix_set()

```
integer(c_int) function gsl_spmatrix_set (  
    type(c_ptr), value m,  
    integer(c_size_t), value i,  
    integer(c_size_t), value j,  
    real(c_double), value x )
```

49.78.1.32 gsl_spmatrix_set_zero()

```
integer(c_int) function gsl_spmatrix_set_zero (  
    type(c_ptr), value m )
```

49.78.1.33 gsl_spmatrix_size()

```
subroutine gsl_spmatrix_size (  
    type(c_ptr), value m,  
    integer(c_size_t) n1,  
    integer(c_size_t) n2 )
```

49.78.1.34 gsl_spmatrix_sp2d()

```
integer(c_int) function gsl_spmatrix_sp2d (  
    type(c_ptr), value A,  
    type(c_ptr), value S )
```

49.78.1.35 gsl_spmatrix_transpose()

```
integer(c_int) function gsl_spmatrix_transpose (  
    type(c_ptr), value m )
```

49.78.1.36 gsl_spmatrix_transpose_memcpy()

```
integer(c_int) function gsl_spmatrix_transpose_memcpy (  
    type(c_ptr), value dest,  
    type(c_ptr), value src )
```


49.79 api/statistics.finc File Reference

Functions/Subroutines

- real(fgsl_double) function [fgsl_stats_mean](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_variance](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_variance_m](#) (data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_sd](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_sd_m](#) (data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_variance_with_fixed_mean](#) (data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_sd_with_fixed_mean](#) (data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_absdev](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_absdev_m](#) (data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_skew](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_skew_m_sd](#) (data, stride, n, mean, sd)
- real(fgsl_double) function [fgsl_stats_kurtosis](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_kurtosis_m_sd](#) (data, stride, n, mean, sd)
- real(fgsl_double) function [fgsl_stats_lag1_autocorrelation](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_lag1_autocorrelation_m](#) (data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_covariance](#) (data1, stride1, data2, stride2, n)
- real(fgsl_double) function [fgsl_stats_covariance_m](#) (data1, stride1, data2, stride2, n, mean1, mean2)
- real(fgsl_double) function [fgsl_stats_correlation](#) (data1, stride1, data2, stride2, n)
- real(fgsl_double) function [fgsl_stats_spearman](#) (data1, stride1, data2, stride2, n, work)
- real(fgsl_double) function [fgsl_stats_wmean](#) (w, wstride, data, stride, n)
- real(fgsl_double) function [fgsl_stats_wvariance](#) (w, wstride, data, stride, n)
- real(fgsl_double) function [fgsl_stats_wvariance_m](#) (w, wstride, data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_wsd](#) (w, wstride, data, stride, n)
- real(fgsl_double) function [fgsl_stats_wsd_m](#) (w, wstride, data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_wvariance_with_fixed_mean](#) (w, wstride, data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_wsd_with_fixed_mean](#) (w, wstride, data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_wabsdev](#) (w, wstride, data, stride, n)
- real(fgsl_double) function [fgsl_stats_wabsdev_m](#) (w, wstride, data, stride, n, mean)
- real(fgsl_double) function [fgsl_stats_wskew](#) (w, wstride, data, stride, n)
- real(fgsl_double) function [fgsl_stats_wskew_m_sd](#) (w, wstride, data, stride, n, mean, sd)
- real(fgsl_double) function [fgsl_stats_wkurtosis](#) (w, wstride, data, stride, n)
- real(fgsl_double) function [fgsl_stats_wkurtosis_m_sd](#) (w, wstride, data, stride, n, mean, sd)
- real(fgsl_double) function [fgsl_stats_max](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_min](#) (data, stride, n)
- subroutine [fgsl_stats_minmax](#) (min, max, data, stride, n)
- integer(fgsl_size_t) function [fgsl_stats_max_index](#) (data, stride, n)
- integer(fgsl_size_t) function [fgsl_stats_min_index](#) (data, stride, n)
- subroutine [fgsl_stats_minmax_index](#) (min_index, max_index, data, stride, n)
- real(fgsl_double) function [fgsl_stats_median_from_sorted_data](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_quantile_from_sorted_data](#) (data, stride, n, f)

49.79.1 Function/Subroutine Documentation

49.79.1.1 fgsl_stats_absdev()

```
real(fgsl_double) function fgsl_stats_absdev (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.2 fgsl_stats_absdev_m()

```
real(fgsl_double) function fgsl_stats_absdev_m (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(in) mean )
```

49.79.1.3 fgsl_stats_correlation()

```
real(fgsl_double) function fgsl_stats_correlation (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data1,  
    integer(fgsl_size_t), intent(in) stride1,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data2,  
    integer(fgsl_size_t), intent(in) stride2,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.4 fgsl_stats_covariance()

```
real(fgsl_double) function fgsl_stats_covariance (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data1,  
    integer(fgsl_size_t), intent(in) stride1,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data2,  
    integer(fgsl_size_t), intent(in) stride2,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.5 fgsl_stats_covariance_m()

```
real(fgsl_double) function fgsl_stats_covariance_m (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data1,  
    integer(fgsl_size_t), intent(in) stride1,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data2,  
    integer(fgsl_size_t), intent(in) stride2,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(in) mean1,  
    real(fgsl_double), intent(in) mean2 )
```

49.79.1.6 fgsl_stats_kurtosis()

```
real(fgsl_double) function fgsl_stats_kurtosis (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.7 fgsl_stats_kurtosis_m_sd()

```
real(fgsl_double) function fgsl_stats_kurtosis_m_sd (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(in) mean,  
    real(fgsl_double), intent(in) sd )
```

49.79.1.8 fgsl_stats_lag1_autocorrelation()

```
real(fgsl_double) function fgsl_stats_lag1_autocorrelation (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.9 fgsl_stats_lag1_autocorrelation_m()

```
real(fgsl_double) function fgsl_stats_lag1_autocorrelation_m (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(in) mean )
```

49.79.1.10 fgsl_stats_max()

```
real(fgsl_double) function fgsl_stats_max (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.11 fgsl_stats_max_index()

```
integer(fgsl_size_t) function fgsl_stats_max_index (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.12 fgsl_stats_mean()

```
real(fgsl_double) function fgsl_stats_mean (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.13 fgsl_stats_median_from_sorted_data()

```
real(fgsl_double) function fgsl_stats_median_from_sorted_data (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.14 fgsl_stats_min()

```
real(fgsl_double) function fgsl_stats_min (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.15 fgsl_stats_min_index()

```
integer(fgsl_size_t) function fgsl_stats_min_index (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.16 fgsl_stats_minmax()

```
subroutine fgsl_stats_minmax (
    real(fgsl_double), intent(out) min,
    real(fgsl_double), intent(out) max,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.17 fgsl_stats_minmax_index()

```
subroutine fgsl_stats_minmax_index (
    integer(fgsl_size_t), intent(out) min_index,
    integer(fgsl_size_t), intent(out) max_index,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.18 fgsl_stats_quantile_from_sorted_data()

```
real(fgsl_double) function fgsl_stats_quantile_from_sorted_data (
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(in) f )
```

49.79.1.19 fgsl_stats_sd()

```
real(fgsl_double) function fgsl_stats_sd (
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.20 fgsl_stats_sd_m()

```
real(fgsl_double) function fgsl_stats_sd_m (
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(in) mean )
```

49.79.1.21 fgsl_stats_sd_with_fixed_mean()

```
real(fgsl_double) function fgsl_stats_sd_with_fixed_mean (
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(in) mean )
```

49.79.1.22 fgsl_stats_skew()

```
real(fgsl_double) function fgsl_stats_skew (
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.23 fgsl_stats_skew_m_sd()

```
real(fgsl_double) function fgsl_stats_skew_m_sd (
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(in) mean,
    real(fgsl_double), intent(in) sd )
```

49.79.1.24 fgsl_stats_spearman()

```
real(fgsl_double) function fgsl_stats_spearman (
    real(fgsl_double), dimension(:), intent(in), target, contiguous data1,
    integer(fgsl_size_t), intent(in) stride1,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data2,
    integer(fgsl_size_t), intent(in) stride2,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous work )
```

49.79.1.25 fgsl_stats_variance()

```
real(fgsl_double) function fgsl_stats_variance (
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.26 fgsl_stats_variance_m()

```
real(fgsl_double) function fgsl_stats_variance_m (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(in) mean )
```

49.79.1.27 fgsl_stats_variance_with_fixed_mean()

```
real(fgsl_double) function fgsl_stats_variance_with_fixed_mean (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(in) mean )
```

49.79.1.28 fgsl_stats_wabsdev()

```
real(fgsl_double) function fgsl_stats_wabsdev (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,  
    integer(fgsl_size_t), intent(in) wstride,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.29 fgsl_stats_wabsdev_m()

```
real(fgsl_double) function fgsl_stats_wabsdev_m (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,  
    integer(fgsl_size_t), intent(in) wstride,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(in) mean )
```

49.79.1.30 fgsl_stats_wkurtosis()

```
real(fgsl_double) function fgsl_stats_wkurtosis (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,  
    integer(fgsl_size_t), intent(in) wstride,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.31 fgsl_stats_wkurtosis_m_sd()

```
real(fgsl_double) function fgsl_stats_wkurtosis_m_sd (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,  
    integer(fgsl_size_t), intent(in) wstride,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(in) mean,  
    real(fgsl_double), intent(in) sd )
```

49.79.1.32 fgsl_stats_wmean()

```
real(fgsl_double) function fgsl_stats_wmean (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,  
    integer(fgsl_size_t), intent(in) wstride,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.33 fgsl_stats_wsd()

```
real(fgsl_double) function fgsl_stats_wsd (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,  
    integer(fgsl_size_t), intent(in) wstride,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.34 fgsl_stats_wsd_m()

```
real(fgsl_double) function fgsl_stats_wsd_m (  
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,  
    integer(fgsl_size_t), intent(in) wstride,  
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,  
    integer(fgsl_size_t), intent(in) stride,  
    integer(fgsl_size_t), intent(in) n,  
    real(fgsl_double), intent(in) mean )
```


49.79.1.35 fgsl_stats_wsd_with_fixed_mean()

```
real(fgsl_double) function fgsl_stats_wsd_with_fixed_mean (
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,
    integer(fgsl_size_t), intent(in) wstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(in) mean )
```

49.79.1.36 fgsl_stats_wskew()

```
real(fgsl_double) function fgsl_stats_wskew (
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,
    integer(fgsl_size_t), intent(in) wstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.37 fgsl_stats_wskew_m_sd()

```
real(fgsl_double) function fgsl_stats_wskew_m_sd (
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,
    integer(fgsl_size_t), intent(in) wstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(in) mean,
    real(fgsl_double), intent(in) sd )
```

49.79.1.38 fgsl_stats_wvariance()

```
real(fgsl_double) function fgsl_stats_wvariance (
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,
    integer(fgsl_size_t), intent(in) wstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n )
```

49.79.1.39 fgsl_stats_wvariance_m()

```

real(fgsl_double) function fgsl_stats_wvariance_m (
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,
    integer(fgsl_size_t), intent(in) wstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(in) mean )

```

49.79.1.40 fgsl_stats_wvariance_with_fixed_mean()

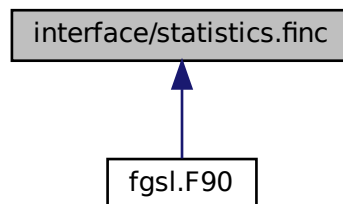
```

real(fgsl_double) function fgsl_stats_wvariance_with_fixed_mean (
    real(fgsl_double), dimension(:), intent(in), target, contiguous w,
    integer(fgsl_size_t), intent(in) wstride,
    real(fgsl_double), dimension(:), intent(in), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    real(fgsl_double), intent(in) mean )

```

49.80 interface/statistics.finc File Reference

This graph shows which files directly or indirectly include this file:

**Functions/Subroutines**

- real(c_double) function [gsl_stats_mean](#) (data, stride, n)
- real(c_double) function [gsl_stats_variance](#) (data, stride, n)
- real(c_double) function [gsl_stats_variance_m](#) (data, stride, n, mean)
- real(c_double) function [gsl_stats_sd](#) (data, stride, n)
- real(c_double) function [gsl_stats_sd_m](#) (data, stride, n, mean)
- real(c_double) function [gsl_stats_variance_with_fixed_mean](#) (data, stride, n, mean)
- real(c_double) function [gsl_stats_sd_with_fixed_mean](#) (data, stride, n, mean)
- real(c_double) function [gsl_stats_absdev](#) (data, stride, n)

- real(c_double) function [gsl_stats_absdev_m](#) (data, stride, n, mean)
- real(c_double) function [gsl_stats_skew](#) (data, stride, n)
- real(c_double) function [gsl_stats_skew_m_sd](#) (data, stride, n, mean, sd)
- real(c_double) function [gsl_stats_kurtosis](#) (data, stride, n)
- real(c_double) function [gsl_stats_kurtosis_m_sd](#) (data, stride, n, mean, sd)
- real(c_double) function [gsl_stats_lag1_autocorrelation](#) (data, stride, n)
- real(c_double) function [gsl_stats_lag1_autocorrelation_m](#) (data, stride, n, mean)
- real(c_double) function [gsl_stats_covariance](#) (data1, stride1, data2, stride2, n)
- real(c_double) function [gsl_stats_covariance_m](#) (data1, stride1, data2, stride2, n, mean1, mean2)
- real(c_double) function [gsl_stats_correlation](#) (data1, stride1, data2, stride2, n)
- real(c_double) function [gsl_stats_spearman](#) (data1, stride1, data2, stride2, n, work)
- real(c_double) function [gsl_stats_wmean](#) (w, wstride, data, stride, n)
- real(c_double) function [gsl_stats_wvariance](#) (w, wstride, data, stride, n)
- real(c_double) function [gsl_stats_wvariance_m](#) (w, wstride, data, stride, n, mean)
- real(c_double) function [gsl_stats_wsd](#) (w, wstride, data, stride, n)
- real(c_double) function [gsl_stats_wsd_m](#) (w, wstride, data, stride, n, mean)
- real(c_double) function [gsl_stats_wvariance_with_fixed_mean](#) (w, wstride, data, stride, n, mean)
- real(c_double) function [gsl_stats_wsd_with_fixed_mean](#) (w, wstride, data, stride, n, mean)
- real(c_double) function [gsl_stats_wabsdev](#) (w, wstride, data, stride, n)
- real(c_double) function [gsl_stats_wabsdev_m](#) (w, wstride, data, stride, n, mean)
- real(c_double) function [gsl_stats_wskew](#) (w, wstride, data, stride, n)
- real(c_double) function [gsl_stats_wskew_m_sd](#) (w, wstride, data, stride, n, mean, sd)
- real(c_double) function [gsl_stats_wkurtosis](#) (w, wstride, data, stride, n)
- real(c_double) function [gsl_stats_wkurtosis_m_sd](#) (w, wstride, data, stride, n, mean, sd)
- real(c_double) function [gsl_stats_max](#) (data, stride, n)
- real(c_double) function [gsl_stats_min](#) (data, stride, n)
- subroutine [gsl_stats_minmax](#) (min, max, data, stride, n)
- integer(c_size_t) function [gsl_stats_max_index](#) (data, stride, n)
- integer(c_size_t) function [gsl_stats_min_index](#) (data, stride, n)
- subroutine [gsl_stats_minmax_index](#) (min_index, max_index, data, stride, n)
- real(c_double) function [gsl_stats_median_from_sorted_data](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_median](#) (data, stride, n)
- real(c_double) function [gsl_stats_quantile_from_sorted_data](#) (data, stride, n, f)
- subroutine [fgsl_stats_select](#) (data, stride, n, k)
- real(fgsl_double) function [fgsl_stats_trmean_from_sorted_data](#) (alpha, data, stride, n)
- real(fgsl_double) function [fgsl_stats_gastwirth_from_sorted_data](#) (data, stride, n)
- real(fgsl_double) function [fgsl_stats_mad0](#) (data, stride, n, work)
- real(fgsl_double) function [fgsl_stats_mad](#) (data, stride, n, work)
- real(fgsl_double) function [fgsl_stats_sn0_from_sorted_data](#) (data, stride, n, work)
- real(fgsl_double) function [fgsl_stats_sn_from_sorted_data](#) (data, stride, n, work)
- real(fgsl_double) function [fgsl_stats_qn0_from_sorted_data](#) (data, stride, n, work, work_int)
- real(fgsl_double) function [fgsl_stats_qn_from_sorted_data](#) (data, stride, n, work, work_int)

49.80.1 Function/Subroutine Documentation

49.80.1.1 fgsl_stats_gastwirth_from_sorted_data()

```
real(fgsl_double) function fgsl_stats_gastwirth_from_sorted_data (
    real(fgsl_double), dimension(*), intent(in) data,
    integer(fgsl_size_t), value stride,
    integer(fgsl_size_t), value n )
```

49.80.1.2 fgsl_stats_mad()

```
real(fgsl_double) function fgsl_stats_mad (  
    real(fgsl_double), dimension(*), intent(in) data,  
    integer(fgsl_size_t), value stride,  
    integer(fgsl_size_t), value n,  
    real(fgsl_double), dimension(*), intent(inout) work )
```

49.80.1.3 fgsl_stats_mad0()

```
real(fgsl_double) function fgsl_stats_mad0 (  
    real(fgsl_double), dimension(*), intent(in) data,  
    integer(fgsl_size_t), value stride,  
    integer(fgsl_size_t), value n,  
    real(fgsl_double), dimension(*), intent(inout) work )
```

49.80.1.4 fgsl_stats_median()

```
real(fgsl_double) function fgsl_stats_median (  
    real(fgsl_double), dimension(*), intent(in) data,  
    integer(fgsl_size_t), value stride,  
    integer(fgsl_size_t), value n )
```

49.80.1.5 fgsl_stats_qn0_from_sorted_data()

```
real(fgsl_double) function fgsl_stats_qn0_from_sorted_data (  
    real(fgsl_double), dimension(*), intent(in) data,  
    integer(fgsl_size_t), value stride,  
    integer(fgsl_size_t), value n,  
    real(fgsl_double), dimension(*), intent(inout) work,  
    integer(fgsl_int), dimension(*), intent(inout) work_int )
```

49.80.1.6 fgsl_stats_qn_from_sorted_data()

```
real(fgsl_double) function fgsl_stats_qn_from_sorted_data (  
    real(fgsl_double), dimension(*), intent(in) data,  
    integer(fgsl_size_t), value stride,  
    integer(fgsl_size_t), value n,  
    real(fgsl_double), dimension(*), intent(inout) work,  
    integer(fgsl_int), dimension(*), intent(inout) work_int )
```

49.80.1.7 fgsl_stats_select()

```
subroutine fgsl_stats_select (
    real(fgsl_double), dimension(*), intent(inout) data,
    integer(fgsl_size_t), value stride,
    integer(fgsl_size_t), value n,
    integer(fgsl_size_t), value k )
```

49.80.1.8 fgsl_stats_sn0_from_sorted_data()

```
real(fgsl_double) function fgsl_stats_sn0_from_sorted_data (
    real(fgsl_double), dimension(*), intent(in) data,
    integer(fgsl_size_t), value stride,
    integer(fgsl_size_t), value n,
    real(fgsl_double), dimension(*), intent(inout) work )
```

49.80.1.9 fgsl_stats_sn_from_sorted_data()

```
real(fgsl_double) function fgsl_stats_sn_from_sorted_data (
    real(fgsl_double), dimension(*), intent(in) data,
    integer(fgsl_size_t), value stride,
    integer(fgsl_size_t), value n,
    real(fgsl_double), dimension(*), intent(inout) work )
```

49.80.1.10 fgsl_stats_trmean_from_sorted_data()

```
real(fgsl_double) function fgsl_stats_trmean_from_sorted_data (
    real(fgsl_double), value alpha,
    real(fgsl_double), dimension(*), intent(in) data,
    integer(fgsl_size_t), value stride,
    integer(fgsl_size_t), value n )
```

49.80.1.11 gsl_stats_absdev()

```
real(c_double) function gsl_stats_absdev (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.80.1.12 gsl_stats_absdev_m()

```
real(c_double) function gsl_stats_absdev_m (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    real(c_double), value mean )
```

49.80.1.13 gsl_stats_correlation()

```
real(c_double) function gsl_stats_correlation (  
    type(c_ptr), value data1,  
    integer(c_size_t), value stride1,  
    type(c_ptr), value data2,  
    integer(c_size_t), value stride2,  
    integer(c_size_t), value n )
```

49.80.1.14 gsl_stats_covariance()

```
real(c_double) function gsl_stats_covariance (  
    type(c_ptr), value data1,  
    integer(c_size_t), value stride1,  
    type(c_ptr), value data2,  
    integer(c_size_t), value stride2,  
    integer(c_size_t), value n )
```

49.80.1.15 gsl_stats_covariance_m()

```
real(c_double) function gsl_stats_covariance_m (  
    type(c_ptr), value data1,  
    integer(c_size_t), value stride1,  
    type(c_ptr), value data2,  
    integer(c_size_t), value stride2,  
    integer(c_size_t), value n,  
    real(c_double), value mean1,  
    real(c_double), value mean2 )
```

49.80.1.16 gsl_stats_kurtosis()

```
real(c_double) function gsl_stats_kurtosis (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.17 gsl_stats_kurtosis_m_sd()

```
real(c_double) function gsl_stats_kurtosis_m_sd (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    real(c_double), value mean,  
    real(c_double), value sd )
```

49.80.1.18 gsl_stats_lag1_autocorrelation()

```
real(c_double) function gsl_stats_lag1_autocorrelation (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.19 gsl_stats_lag1_autocorrelation_m()

```
real(c_double) function gsl_stats_lag1_autocorrelation_m (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    real(c_double), value mean )
```

49.80.1.20 gsl_stats_max()

```
real(c_double) function gsl_stats_max (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.21 gsl_stats_max_index()

```
integer(c_size_t) function gsl_stats_max_index (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.22 gsl_stats_mean()

```
real(c_double) function gsl_stats_mean (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.23 gsl_stats_median_from_sorted_data()

```
real(c_double) function gsl_stats_median_from_sorted_data (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.24 gsl_stats_min()

```
real(c_double) function gsl_stats_min (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.25 gsl_stats_min_index()

```
integer(c_size_t) function gsl_stats_min_index (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.26 gsl_stats_minmax()

```
subroutine gsl_stats_minmax (  
    real(c_double) min,  
    real(c_double) max,  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```


49.80.1.27 gsl_stats_minmax_index()

```
subroutine gsl_stats_minmax_index (
    integer(c_size_t) min_index,
    integer(c_size_t) max_index,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.80.1.28 gsl_stats_quantile_from_sorted_data()

```
real(c_double) function gsl_stats_quantile_from_sorted_data (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value f )
```

49.80.1.29 gsl_stats_sd()

```
real(c_double) function gsl_stats_sd (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.80.1.30 gsl_stats_sd_m()

```
real(c_double) function gsl_stats_sd_m (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean )
```

49.80.1.31 gsl_stats_sd_with_fixed_mean()

```
real(c_double) function gsl_stats_sd_with_fixed_mean (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean )
```

49.80.1.32 gsl_stats_skew()

```
real(c_double) function gsl_stats_skew (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.33 gsl_stats_skew_m_sd()

```
real(c_double) function gsl_stats_skew_m_sd (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    real(c_double), value mean,  
    real(c_double), value sd )
```

49.80.1.34 gsl_stats_spearman()

```
real(c_double) function gsl_stats_spearman (  
    type(c_ptr), value data1,  
    integer(c_size_t), value stride1,  
    type(c_ptr), value data2,  
    integer(c_size_t), value stride2,  
    integer(c_size_t), value n,  
    type(c_ptr), value work )
```

49.80.1.35 gsl_stats_variance()

```
real(c_double) function gsl_stats_variance (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n )
```

49.80.1.36 gsl_stats_variance_m()

```
real(c_double) function gsl_stats_variance_m (  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    real(c_double), value mean )
```

49.80.1.37 gsl_stats_variance_with_fixed_mean()

```
real(c_double) function gsl_stats_variance_with_fixed_mean (
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean )
```

49.80.1.38 gsl_stats_wabsdev()

```
real(c_double) function gsl_stats_wabsdev (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.80.1.39 gsl_stats_wabsdev_m()

```
real(c_double) function gsl_stats_wabsdev_m (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean )
```

49.80.1.40 gsl_stats_wkurtosis()

```
real(c_double) function gsl_stats_wkurtosis (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.80.1.41 gsl_stats_wkurtosis_m_sd()

```
real(c_double) function gsl_stats_wkurtosis_m_sd (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean,
    real(c_double), value sd )
```

49.80.1.42 gsl_stats_wmean()

```
real(c_double) function gsl_stats_wmean (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.80.1.43 gsl_stats_wsd()

```
real(c_double) function gsl_stats_wsd (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.80.1.44 gsl_stats_wsd_m()

```
real(c_double) function gsl_stats_wsd_m (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean )
```

49.80.1.45 gsl_stats_wsd_with_fixed_mean()

```
real(c_double) function gsl_stats_wsd_with_fixed_mean (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean )
```

49.80.1.46 gsl_stats_wskew()

```
real(c_double) function gsl_stats_wskew (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.80.1.47 gsl_stats_wskew_m_sd()

```
real(c_double) function gsl_stats_wskew_m_sd (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean,
    real(c_double), value sd )
```

49.80.1.48 gsl_stats_wvariance()

```
real(c_double) function gsl_stats_wvariance (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n )
```

49.80.1.49 gsl_stats_wvariance_m()

```
real(c_double) function gsl_stats_wvariance_m (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean )
```

49.80.1.50 gsl_stats_wvariance_with_fixed_mean()

```
real(c_double) function gsl_stats_wvariance_with_fixed_mean (
    type(c_ptr), value w,
    integer(c_size_t), value wstride,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    real(c_double), value mean )
```

49.81 api/sum_levin.finc File Reference**Functions/Subroutines**

- type(fgsl_sum_levin_u_workspace) function [fgsl_sum_levin_u_alloc](#) (n)
- integer(fgsl_int) function [fgsl_sum_levin_u_free](#) (w)
- integer(fgsl_int) function [fgsl_sum_levin_u_accel](#) (array, array_size, w, sum_accel, abserr)
- type(fgsl_sum_levin_ustrunc_workspace) function [fgsl_sum_levin_ustrunc_alloc](#) (n)
- integer(fgsl_int) function [fgsl_sum_levin_ustrunc_free](#) (w)
- integer(fgsl_int) function [fgsl_sum_levin_ustrunc_accel](#) (array, array_size, w, sum_accel, abserr)

49.81.1 Function/Subroutine Documentation

49.81.1.1 fgsl_sum_levin_u_accel()

```
integer(fgsl_int) function fgsl_sum_levin_u_accel (  
    real(fgsl_double), dimension(array_size), intent(in) array,  
    integer(fgsl_size_t), intent(in) array_size,  
    type(fgsl_sum_levin_u_workspace), intent(in) w,  
    real(fgsl_double), intent(out) sum_accel,  
    real(fgsl_double), intent(out) abserr )
```

49.81.1.2 fgsl_sum_levin_u_alloc()

```
type(fgsl_sum_levin_u_workspace) function fgsl_sum_levin_u_alloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.81.1.3 fgsl_sum_levin_u_free()

```
integer(fgsl_int) function fgsl_sum_levin_u_free (  
    type(fgsl_sum_levin_u_workspace), intent(inout) w )
```

49.81.1.4 fgsl_sum_levin_utrunc_accel()

```
integer(fgsl_int) function fgsl_sum_levin_utrunc_accel (  
    real(fgsl_double), dimension(array_size), intent(in) array,  
    integer(fgsl_size_t), intent(in) array_size,  
    type(fgsl_sum_levin_utrunc_workspace), intent(in) w,  
    real(fgsl_double), intent(out) sum_accel,  
    real(fgsl_double), intent(out) abserr )
```

49.81.1.5 fgsl_sum_levin_utrunc_alloc()

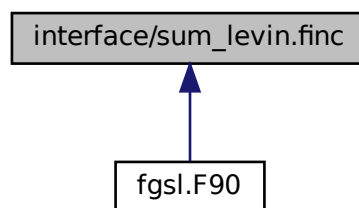
```
type(fgsl_sum_levin_utrunc_workspace) function fgsl_sum_levin_utrunc_alloc (  
    integer(fgsl_size_t), intent(in) n )
```

49.81.1.6 fgsl_sum_levin_utrunc_free()

```
integer(fgsl_int) function fgsl_sum_levin_utrunc_free (
    type(fgsl_sum_levin_utrunc_workspace), intent(inout) w )
```

49.82 interface/sum_levin.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_sum_levin_u_alloc](#) (n)
- integer(c_int) function [gsl_sum_levin_u_free](#) (w)
- integer(c_int) function [gsl_sum_levin_u_accel](#) (array, array_size, w, sum_accel, abserr)
- type(c_ptr) function [gsl_sum_levin_utrunc_alloc](#) (n)
- integer(c_int) function [gsl_sum_levin_utrunc_free](#) (w)
- integer(c_int) function [gsl_sum_levin_utrunc_accel](#) (array, array_size, w, sum_accel, abserr)

49.82.1 Function/Subroutine Documentation

49.82.1.1 gsl_sum_levin_u_accel()

```
integer(c_int) function gsl_sum_levin_u_accel (
    real(c_double), dimension(array_size), intent(in) array,
    integer(c_size_t), value array_size,
    type(c_ptr), value w,
    real(c_double), intent(out) sum_accel,
    real(c_double), intent(out) abserr )
```

49.82.1.2 `gsl_sum_levin_u_alloc()`

```
type(c_ptr) function gsl_sum_levin_u_alloc (  
    integer(c_size_t), value n )
```

49.82.1.3 `gsl_sum_levin_u_free()`

```
integer(c_int) function gsl_sum_levin_u_free (  
    type(c_ptr), value w )
```

49.82.1.4 `gsl_sum_levin_utrunc_accel()`

```
integer(c_int) function gsl_sum_levin_utrunc_accel (  
    real(c_double), dimension(array_size), intent(in) array,  
    integer(c_size_t), value array_size,  
    type(c_ptr), value w,  
    real(c_double), intent(out) sum_accel,  
    real(c_double), intent(out) abserr )
```

49.82.1.5 `gsl_sum_levin_utrunc_alloc()`

```
type(c_ptr) function gsl_sum_levin_utrunc_alloc (  
    integer(c_size_t), value n )
```

49.82.1.6 `gsl_sum_levin_utrunc_free()`

```
integer(c_int) function gsl_sum_levin_utrunc_free (  
    type(c_ptr), value w )
```


49.83 api/wavelet.finc File Reference

Functions/Subroutines

- type(fgsl_wavelet) function [fgsl_wavelet_alloc](#) (t, k)
- character(kind=fgsl_char, len=fgsl_strmax) function [fgsl_wavelet_name](#) (wavelet)
- subroutine [fgsl_wavelet_free](#) (w)
- type(fgsl_wavelet_workspace) function [fgsl_wavelet_workspace_alloc](#) (n)
- subroutine [fgsl_wavelet_workspace_free](#) (w)
- integer(fgsl_int) function [fgsl_wavelet_transform](#) (w, data, stride, n, dir, work)
- integer(fgsl_int) function [fgsl_wavelet_transform_forward](#) (w, data, stride, n, work)
- integer(fgsl_int) function [fgsl_wavelet_transform_inverse](#) (w, data, stride, n, work)
- integer(fgsl_int) function [fgsl_wavelet2d_transform](#) (w, data, tda, size1, size2, dir, work)
- integer(fgsl_int) function [fgsl_wavelet2d_transform_forward](#) (w, data, tda, size1, size2, work)
- integer(fgsl_int) function [fgsl_wavelet2d_transform_inverse](#) (w, data, tda, size1, size2, work)
- integer(fgsl_int) function [fgsl_wavelet2d_transform_matrix](#) (w, m, dir, work)
- integer(fgsl_int) function [fgsl_wavelet2d_transform_matrix_forward](#) (w, m, work)
- integer(fgsl_int) function [fgsl_wavelet2d_transform_matrix_inverse](#) (w, m, work)
- integer(fgsl_int) function [fgsl_wavelet2d_nstransform](#) (w, data, tda, size1, size2, dir, work)
- integer(fgsl_int) function [fgsl_wavelet2d_nstransform_forward](#) (w, data, tda, size1, size2, work)
- integer(fgsl_int) function [fgsl_wavelet2d_nstransform_inverse](#) (w, data, tda, size1, size2, work)
- integer(fgsl_int) function [fgsl_wavelet2d_nstransform_matrix](#) (w, m, dir, work)
- integer(fgsl_int) function [fgsl_wavelet2d_nstransform_matrix_forward](#) (w, m, work)
- integer(fgsl_int) function [fgsl_wavelet2d_nstransform_matrix_inverse](#) (w, m, work)
- logical function [fgsl_wavelet_status](#) (wavelet)
- logical function [fgsl_wavelet_workspace_status](#) (wavelet_workspace)
- integer(fgsl_size_t) function [fgsl_sizeof_wavelet](#) (w)
- integer(fgsl_size_t) function [fgsl_sizeof_wavelet_workspace](#) (w)

49.83.1 Function/Subroutine Documentation

49.83.1.1 fgsl_sizeof_wavelet()

```
integer(fgsl_size_t) function fgsl_sizeof_wavelet (
    type(fgsl_wavelet), intent(in) w )
```

49.83.1.2 fgsl_sizeof_wavelet_workspace()

```
integer(fgsl_size_t) function fgsl_sizeof_wavelet_workspace (
    type(fgsl_wavelet_workspace), intent(in) w )
```

49.83.1.3 fgsl_wavelet2d_nstransform()

```
integer(fgsl_int) function fgsl_wavelet2d_nstransform (  
    type(fgsl_wavelet), intent(in) w,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) tda,  
    integer(fgsl_size_t), intent(in) size1,  
    integer(fgsl_size_t), intent(in) size2,  
    integer(fgsl_int), intent(in) dir,  
    type(fgsl_wavelet_workspace), intent(inout) work )
```

49.83.1.4 fgsl_wavelet2d_nstransform_forward()

```
integer(fgsl_int) function fgsl_wavelet2d_nstransform_forward (  
    type(fgsl_wavelet), intent(in) w,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) tda,  
    integer(fgsl_size_t), intent(in) size1,  
    integer(fgsl_size_t), intent(in) size2,  
    type(fgsl_wavelet_workspace), intent(inout) work )
```

49.83.1.5 fgsl_wavelet2d_nstransform_inverse()

```
integer(fgsl_int) function fgsl_wavelet2d_nstransform_inverse (  
    type(fgsl_wavelet), intent(in) w,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) tda,  
    integer(fgsl_size_t), intent(in) size1,  
    integer(fgsl_size_t), intent(in) size2,  
    type(fgsl_wavelet_workspace), intent(inout) work )
```

49.83.1.6 fgsl_wavelet2d_nstransform_matrix()

```
integer(fgsl_int) function fgsl_wavelet2d_nstransform_matrix (  
    type(fgsl_wavelet), intent(in) w,  
    type(fgsl_matrix), intent(inout) m,  
    integer(fgsl_int), intent(in) dir,  
    type(fgsl_wavelet_workspace) work )
```

49.83.1.7 fgsl_wavelet2d_nstransform_matrix_forward()

```
integer(fgsl_int) function fgsl_wavelet2d_nstransform_matrix_forward (  
    type(fgsl_wavelet), intent(in) w,  
    type(fgsl_matrix), intent(inout) m,  
    type(fgsl_wavelet_workspace) work )
```

49.83.1.8 fgsl_wavelet2d_nstransform_matrix_inverse()

```
integer(fgsl_int) function fgsl_wavelet2d_nstransform_matrix_inverse (  
    type(fgsl_wavelet), intent(in) w,  
    type(fgsl_matrix), intent(inout) m,  
    type(fgsl_wavelet_workspace) work )
```

49.83.1.9 fgsl_wavelet2d_transform()

```
integer(fgsl_int) function fgsl_wavelet2d_transform (  
    type(fgsl_wavelet), intent(in) w,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) tda,  
    integer(fgsl_size_t), intent(in) size1,  
    integer(fgsl_size_t), intent(in) size2,  
    integer(fgsl_int), intent(in) dir,  
    type(fgsl_wavelet_workspace), intent(inout) work )
```

49.83.1.10 fgsl_wavelet2d_transform_forward()

```
integer(fgsl_int) function fgsl_wavelet2d_transform_forward (  
    type(fgsl_wavelet), intent(in) w,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) tda,  
    integer(fgsl_size_t), intent(in) size1,  
    integer(fgsl_size_t), intent(in) size2,  
    type(fgsl_wavelet_workspace), intent(inout) work )
```

49.83.1.11 fgsl_wavelet2d_transform_inverse()

```
integer(fgsl_int) function fgsl_wavelet2d_transform_inverse (  
    type(fgsl_wavelet), intent(in) w,  
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,  
    integer(fgsl_size_t), intent(in) tda,  
    integer(fgsl_size_t), intent(in) size1,  
    integer(fgsl_size_t), intent(in) size2,  
    type(fgsl_wavelet_workspace), intent(inout) work )
```

49.83.1.12 fgsl_wavelet2d_transform_matrix()

```
integer(fgsl_int) function fgsl_wavelet2d_transform_matrix (  
    type(fgsl_wavelet), intent(in) w,  
    type(fgsl_matrix), intent(inout) m,  
    integer(fgsl_int), intent(in) dir,  
    type(fgsl_wavelet_workspace) work )
```

49.83.1.13 fgsl_wavelet2d_transform_matrix_forward()

```
integer(fgsl_int) function fgsl_wavelet2d_transform_matrix_forward (
    type(fgsl_wavelet), intent(in) w,
    type(fgsl_matrix), intent(inout) m,
    type(fgsl_wavelet_workspace) work )
```

49.83.1.14 fgsl_wavelet2d_transform_matrix_inverse()

```
integer(fgsl_int) function fgsl_wavelet2d_transform_matrix_inverse (
    type(fgsl_wavelet), intent(in) w,
    type(fgsl_matrix), intent(inout) m,
    type(fgsl_wavelet_workspace) work )
```

49.83.1.15 fgsl_wavelet_alloc()

```
type(fgsl_wavelet) function fgsl_wavelet_alloc (
    type(fgsl_wavelet_type), intent(in) t,
    integer(fgsl_size_t), intent(in) k )
```

49.83.1.16 fgsl_wavelet_free()

```
subroutine fgsl_wavelet_free (
    type(fgsl_wavelet), intent(inout) w )
```

49.83.1.17 fgsl_wavelet_name()

```
character(kind=fgsl_char,len=fgsl_strmax) function fgsl_wavelet_name (
    type(fgsl_wavelet), intent(in) wavelet )
```

49.83.1.18 fgsl_wavelet_status()

```
logical function fgsl_wavelet_status (
    type(fgsl_wavelet), intent(in) wavelet )
```

49.83.1.19 fgsl_wavelet_transform()

```
integer(fgsl_int) function fgsl_wavelet_transform (
    type(fgsl_wavelet), intent(in) w,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    integer(fgsl_int), intent(in) dir,
    type(fgsl_wavelet_workspace), intent(inout) work )
```

49.83.1.20 fgsl_wavelet_transform_forward()

```
integer(fgsl_int) function fgsl_wavelet_transform_forward (
    type(fgsl_wavelet), intent(in) w,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    type(fgsl_wavelet_workspace), intent(inout) work )
```

49.83.1.21 fgsl_wavelet_transform_inverse()

```
integer(fgsl_int) function fgsl_wavelet_transform_inverse (
    type(fgsl_wavelet), intent(in) w,
    real(fgsl_double), dimension(:), intent(inout), target, contiguous data,
    integer(fgsl_size_t), intent(in) stride,
    integer(fgsl_size_t), intent(in) n,
    type(fgsl_wavelet_workspace), intent(inout) work )
```

49.83.1.22 fgsl_wavelet_workspace_alloc()

```
type(fgsl_wavelet_workspace) function fgsl_wavelet_workspace_alloc (
    integer(fgsl_size_t), intent(in) n )
```

49.83.1.23 fgsl_wavelet_workspace_free()

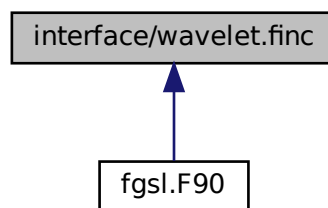
```
subroutine fgsl_wavelet_workspace_free (
    type(fgsl_wavelet_workspace), intent(inout) w )
```

49.83.1.24 fgsl_wavelet_workspace_status()

```
logical function fgsl_wavelet_workspace_status (
    type(fgsl_wavelet_workspace), intent(in) wavelet_workspace )
```

49.84 interface/wavelet.finc File Reference

This graph shows which files directly or indirectly include this file:



Functions/Subroutines

- type(c_ptr) function [gsl_wavelet_alloc](#) (t, k)
- type(c_ptr) function [gsl_wavelet_name](#) (wavelet)
- subroutine [gsl_wavelet_free](#) (w)
- type(c_ptr) function [gsl_wavelet_workspace_alloc](#) (n)
- subroutine [gsl_wavelet_workspace_free](#) (w)
- integer(c_int) function [gsl_wavelet_transform](#) (w, data, stride, n, dir, work)
- integer(c_int) function [gsl_wavelet_transform_forward](#) (w, data, stride, n, work)
- integer(c_int) function [gsl_wavelet_transform_inverse](#) (w, data, stride, n, work)
- integer(c_int) function [gsl_wavelet2d_transform](#) (w, data, tda, size1, size2, dir, work)
- integer(c_int) function [gsl_wavelet2d_transform_forward](#) (w, data, tda, size1, size2, work)
- integer(c_int) function [gsl_wavelet2d_transform_inverse](#) (w, data, tda, size1, size2, work)
- integer(c_int) function [gsl_wavelet2d_transform_matrix](#) (w, m, dir, work)
- integer(c_int) function [gsl_wavelet2d_transform_matrix_forward](#) (w, m, work)
- integer(c_int) function [gsl_wavelet2d_transform_matrix_inverse](#) (w, m, work)
- integer(c_int) function [gsl_wavelet2d_nstransform](#) (w, data, tda, size1, size2, dir, work)
- integer(c_int) function [gsl_wavelet2d_nstransform_forward](#) (w, data, tda, size1, size2, work)
- integer(c_int) function [gsl_wavelet2d_nstransform_inverse](#) (w, data, tda, size1, size2, work)
- integer(c_int) function [gsl_wavelet2d_nstransform_matrix](#) (w, m, dir, work)
- integer(c_int) function [gsl_wavelet2d_nstransform_matrix_forward](#) (w, m, work)
- integer(c_int) function [gsl_wavelet2d_nstransform_matrix_inverse](#) (w, m, work)
- type(c_ptr) function [fgsl_aux_wavelet_alloc](#) (i)
- integer(c_size_t) function [gsl_aux_sizeof_wavelet_workspace](#) ()
- integer(c_size_t) function [gsl_aux_sizeof_wavelet](#) ()

49.84.1 Function/Subroutine Documentation

49.84.1.1 fgsl_aux_wavelet_alloc()

```
type(c_ptr) function fgsl_aux_wavelet_alloc (  
    integer(c_int), value i )
```

49.84.1.2 gsl_aux_sizeof_wavelet()

```
integer(c_size_t) function gsl_aux_sizeof_wavelet
```

49.84.1.3 gsl_aux_sizeof_wavelet_workspace()

```
integer(c_size_t) function gsl_aux_sizeof_wavelet_workspace
```

49.84.1.4 gsl_wavelet2d_nstransform()

```
integer(c_int) function gsl_wavelet2d_nstransform (  
    type(c_ptr), value w,  
    type(c_ptr), value data,  
    integer(c_size_t), value tda,  
    integer(c_size_t), value size1,  
    integer(c_size_t), value size2,  
    integer(c_int), value dir,  
    type(c_ptr), value work )
```

49.84.1.5 gsl_wavelet2d_nstransform_forward()

```
integer(c_int) function gsl_wavelet2d_nstransform_forward (  
    type(c_ptr), value w,  
    type(c_ptr), value data,  
    integer(c_size_t), value tda,  
    integer(c_size_t), value size1,  
    integer(c_size_t), value size2,  
    type(c_ptr), value work )
```

49.84.1.6 `gsl_wavelet2d_nstransform_inverse()`

```
integer(c_int) function gsl_wavelet2d_nstransform_inverse (  
    type(c_ptr), value w,  
    type(c_ptr), value data,  
    integer(c_size_t), value tda,  
    integer(c_size_t), value size1,  
    integer(c_size_t), value size2,  
    type(c_ptr), value work )
```

49.84.1.7 `gsl_wavelet2d_nstransform_matrix()`

```
integer(c_int) function gsl_wavelet2d_nstransform_matrix (  
    type(c_ptr), value w,  
    type(c_ptr), value m,  
    integer(c_int), value dir,  
    type(c_ptr), value work )
```

49.84.1.8 `gsl_wavelet2d_nstransform_matrix_forward()`

```
integer(c_int) function gsl_wavelet2d_nstransform_matrix_forward (  
    type(c_ptr), value w,  
    type(c_ptr), value m,  
    type(c_ptr), value work )
```

49.84.1.9 `gsl_wavelet2d_nstransform_matrix_inverse()`

```
integer(c_int) function gsl_wavelet2d_nstransform_matrix_inverse (  
    type(c_ptr), value w,  
    type(c_ptr), value m,  
    type(c_ptr), value work )
```

49.84.1.10 `gsl_wavelet2d_transform()`

```
integer(c_int) function gsl_wavelet2d_transform (  
    type(c_ptr), value w,  
    type(c_ptr), value data,  
    integer(c_size_t), value tda,  
    integer(c_size_t), value size1,  
    integer(c_size_t), value size2,  
    integer(c_int), value dir,  
    type(c_ptr), value work )
```


49.84.1.11 gsl_wavelet2d_transform_forward()

```
integer(c_int) function gsl_wavelet2d_transform_forward (
    type(c_ptr), value w,
    type(c_ptr), value data,
    integer(c_size_t), value tda,
    integer(c_size_t), value size1,
    integer(c_size_t), value size2,
    type(c_ptr), value work )
```

49.84.1.12 gsl_wavelet2d_transform_inverse()

```
integer(c_int) function gsl_wavelet2d_transform_inverse (
    type(c_ptr), value w,
    type(c_ptr), value data,
    integer(c_size_t), value tda,
    integer(c_size_t), value size1,
    integer(c_size_t), value size2,
    type(c_ptr), value work )
```

49.84.1.13 gsl_wavelet2d_transform_matrix()

```
integer(c_int) function gsl_wavelet2d_transform_matrix (
    type(c_ptr), value w,
    type(c_ptr), value m,
    integer(c_int), value dir,
    type(c_ptr), value work )
```

49.84.1.14 gsl_wavelet2d_transform_matrix_forward()

```
integer(c_int) function gsl_wavelet2d_transform_matrix_forward (
    type(c_ptr), value w,
    type(c_ptr), value m,
    type(c_ptr), value work )
```

49.84.1.15 gsl_wavelet2d_transform_matrix_inverse()

```
integer(c_int) function gsl_wavelet2d_transform_matrix_inverse (
    type(c_ptr), value w,
    type(c_ptr), value m,
    type(c_ptr), value work )
```

49.84.1.16 gsl_wavelet_alloc()

```
type(c_ptr) function gsl_wavelet_alloc (  
    type(c_ptr), value t,  
    integer(c_size_t), value k )
```

49.84.1.17 gsl_wavelet_free()

```
subroutine gsl_wavelet_free (  
    type(c_ptr), value w )
```

49.84.1.18 gsl_wavelet_name()

```
type(c_ptr) function gsl_wavelet_name (  
    type(c_ptr), value wavelet )
```

49.84.1.19 gsl_wavelet_transform()

```
integer(c_int) function gsl_wavelet_transform (  
    type(c_ptr), value w,  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    integer(c_int), value dir,  
    type(c_ptr), value work )
```

49.84.1.20 gsl_wavelet_transform_forward()

```
integer(c_int) function gsl_wavelet_transform_forward (  
    type(c_ptr), value w,  
    type(c_ptr), value data,  
    integer(c_size_t), value stride,  
    integer(c_size_t), value n,  
    type(c_ptr), value work )
```

49.84.1.21 gsl_wavelet_transform_inverse()

```
integer(c_int) function gsl_wavelet_transform_inverse (
    type(c_ptr), value w,
    type(c_ptr), value data,
    integer(c_size_t), value stride,
    integer(c_size_t), value n,
    type(c_ptr), value work )
```

49.84.1.22 gsl_wavelet_workspace_alloc()

```
type(c_ptr) function gsl_wavelet_workspace_alloc (
    integer(c_size_t), value n )
```

49.84.1.23 gsl_wavelet_workspace_free()

```
subroutine gsl_wavelet_workspace_free (
    type(c_ptr), value w )
```

49.85 fgsl.F90 File Reference

```
#include "config.h"
#include "interface/error.finc"
#include "interface/misc.finc"
#include "interface/io.finc"
#include "interface/math.finc"
#include "interface/complex.finc"
#include "interface/poly.finc"
#include "interface/specfunc.finc"
#include "interface/array.finc"
#include "interface/interp.finc"
#include "interface/permutation.finc"
#include "interface/sort.finc"
#include "interface/linalg.finc"
#include "interface/eigen.finc"
#include "interface/fft.finc"
#include "interface/integration.finc"
#include "interface/rng.finc"
#include "interface/statistics.finc"
#include "interface/histogram.finc"
#include "interface/ntuple.finc"
#include "interface/montecarlo.finc"
#include "interface/siman.finc"
#include "interface/ode.finc"
#include "interface/deriv.finc"
#include "interface/chebyshev.finc"
#include "interface/sum_levin.finc"
#include "interface/wavelet.finc"
```

```

#include "interface/dht.finc"
#include "interface/roots.finc"
#include "interface/min.finc"
#include "interface/multiroots.finc"
#include "interface/multimin.finc"
#include "interface/fit.finc"
#include "interface/nlfit.finc"
#include "interface/multifit.finc"
#include "interface/bspline.finc"
#include "interface/ieee.finc"
#include "interface/multilarge.finc"
#include "interface/spmatrix.finc"
#include "interface/splinalg.finc"
#include "interface/rstat.finc"
#include "interface/movstat.finc"
#include "interface/filter.finc"
#include "interface/generics.finc"
#include "api/error.finc"
#include "api/misc.finc"
#include "api/io.finc"
#include "api/math.finc"
#include "api/complex.finc"
#include "api/poly.finc"
#include "api/specfunc.finc"
#include "api/array.finc"

```

Include dependency graph for fgsl.F90:



Data Types

- type [fgsl::fgsl_error_handler_t](#)
- type [fgsl::fgsl_file](#)
- type [fgsl::fgsl_function](#)
- type [fgsl::fgsl_function_fdf](#)
- type [fgsl::fgsl_complex](#)
- type [fgsl::fgsl_poly_complex_workspace](#)
- type [fgsl::fgsl_sf_result](#)
- type [fgsl::fgsl_sf_result](#)
- type [fgsl::fgsl_sf_result_e10](#)
- type [fgsl::fgsl_sf_result_e10](#)
- type [fgsl::fgsl_mode_t](#)
- type [fgsl::fgsl_sf_legendre_t](#)
- type [fgsl::fgsl_sf_mathieu_workspace](#)
- type [fgsl::fgsl_vector](#)
- type [fgsl::fgsl_vector_int](#)
- type [fgsl::fgsl_matrix](#)
- type [fgsl::fgsl_vector_complex](#)
- type [fgsl::fgsl_matrix_complex](#)
- type [fgsl::fgsl_multilarge_linear_type](#)
- type [fgsl::fgsl_multilarge_linear_workspace](#)
- type [fgsl::fgsl_interp_type](#)
- type [fgsl::fgsl_interp](#)
- type [fgsl::fgsl_interp_accel](#)
- type [fgsl::fgsl_spline](#)

- type [fgsl::fgsl_spline2d](#)
- type [fgsl::fgsl_interp2d_type](#)
- type [fgsl::fgsl_interp2d](#)
- type [fgsl::fgsl_permutation](#)
- type [fgsl::fgsl_combination](#)
- type [fgsl::fgsl_multiset](#)
- type [fgsl::fgsl_multifit_robust_type](#)
- type [fgsl::fgsl_multifit_robust_workspace](#)
- type [fgsl::fgsl_multifit_robust_stats](#)
- type [fgsl::fgsl_eigen_symm_workspace](#)
- type [fgsl::fgsl_eigen_symmv_workspace](#)
- type [fgsl::fgsl_eigen_herm_workspace](#)
- type [fgsl::fgsl_eigen_hermv_workspace](#)
- type [fgsl::fgsl_eigen_nonsymm_workspace](#)
- type [fgsl::fgsl_eigen_nonsymmv_workspace](#)
- type [fgsl::fgsl_eigen_gensymm_workspace](#)
- type [fgsl::fgsl_eigen_gensymmv_workspace](#)
- type [fgsl::fgsl_eigen_genherm_workspace](#)
- type [fgsl::fgsl_eigen_genhermv_workspace](#)
- type [fgsl::fgsl_eigen_gen_workspace](#)
- type [fgsl::fgsl_eigen_genv_workspace](#)
- type [fgsl::fgsl_fft_complex_wavetable](#)
- type [fgsl::fgsl_fft_real_wavetable](#)
- type [fgsl::fgsl_fft_halfcomplex_wavetable](#)
- type [fgsl::fgsl_fft_complex_workspace](#)
- type [fgsl::fgsl_fft_real_workspace](#)
- type [fgsl::fgsl_integration_workspace](#)
- type [fgsl::fgsl_integration_qaws_table](#)
- type [fgsl::fgsl_integration_qawo_table](#)
- type [fgsl::fgsl_integration_cquad_workspace](#)
- type [fgsl::fgsl_integration_romberg_workspace](#)
- type [fgsl::fgsl_integration_glfixed_table](#)
- type [fgsl::fgsl_integration_fixed_workspace](#)
- type [fgsl::fgsl_rng](#)
- type [fgsl::fgsl_rng_type](#)
- type [fgsl::fgsl_qrng](#)
- type [fgsl::fgsl_qrng_type](#)
- type [fgsl::fgsl_ran_discrete_t](#)
- type [fgsl::fgsl_histogram](#)
- type [fgsl::fgsl_histogram_pdf](#)
- type [fgsl::fgsl_histogram2d](#)
- type [fgsl::fgsl_histogram2d_pdf](#)
- type [fgsl::fgsl_ntuple](#)
- type [fgsl::fgsl_ntuple_select_fn](#)
- type [fgsl::fgsl_ntuple_value_fn](#)
- type [fgsl::fgsl_monte_function](#)
- type [fgsl::fgsl_monte_plain_state](#)
- type [fgsl::fgsl_monte_miser_state](#)
- type [fgsl::fgsl_monte_vegas_state](#)
- type [fgsl::fgsl_siman_params_t](#)
- type [fgsl::fgsl_odeiv2_system](#)
- type [fgsl::fgsl_odeiv2_step_type](#)
- type [fgsl::fgsl_odeiv2_step](#)
- type [fgsl::fgsl_odeiv2_driver](#)
- type [fgsl::fgsl_odeiv2_control_type](#)

- type fgsl::fgsl_odeiv2_control
- type fgsl::fgsl_odeiv2_evolve
- type fgsl::fgsl_odeiv_system
- type fgsl::fgsl_odeiv_step_type
- type fgsl::fgsl_odeiv_step
- type fgsl::fgsl_odeiv_control
- type fgsl::fgsl_odeiv_control_type
- type fgsl::fgsl_odeiv_evolve
- type fgsl::fgsl_cheb_series
- type fgsl::fgsl_sum_levin_u_workspace
- type fgsl::fgsl_sum_levin_ustrunc_workspace
- type fgsl::fgsl_wavelet
- type fgsl::fgsl_wavelet_type
- type fgsl::fgsl_wavelet_workspace
- type fgsl::fgsl_dht
- type fgsl::fgsl_root_fsolver_type
- type fgsl::fgsl_root_fdfsolver_type
- type fgsl::fgsl_root_fsolver
- type fgsl::fgsl_root_fdfsolver
- type fgsl::fgsl_min_fminimizer_type
- type fgsl::fgsl_min_fminimizer
- type fgsl::fgsl_multiroot_function
- type fgsl::fgsl_multiroot_function_fdf
- type fgsl::fgsl_multiroot_fsolver
- type fgsl::fgsl_multiroot_fsolver_type
- type fgsl::fgsl_multiroot_fdfsolver
- type fgsl::fgsl_multiroot_fdfsolver_type
- type fgsl::fgsl_multimin_function
- type fgsl::fgsl_multimin_function_fdf
- type fgsl::fgsl_multimin_fminimizer
- type fgsl::fgsl_multimin_fminimizer_type
- type fgsl::fgsl_multimin_fdfminimizer
- type fgsl::fgsl_multimin_fdfminimizer_type
- type fgsl::fgsl_multifit_linear_workspace
- type fgsl::fgsl_multifit_nlinear_type
- type fgsl::fgsl_multifit_nlinear_workspace
- type fgsl::fgsl_multifit_nlinear_parameters
- type fgsl::fgsl_multilarge_nlinear_type
- type fgsl::fgsl_multilarge_nlinear_workspace
- type fgsl::fgsl_multilarge_nlinear_parameters
- type fgsl::fgsl_multifit_nlinear_fdf
- type fgsl::fgsl_multilarge_nlinear_fdf
- interface fgsl::fgsl_nlinear_callback
- type fgsl::fgsl_multifit_function
- type fgsl::fgsl_multifit_function_fdf
- type fgsl::fgsl_multifit_fsolver
- type fgsl::fgsl_multifit_fsolver_type
- type fgsl::fgsl_multifit_fdfsolver
- type fgsl::fgsl_multifit_fdfsolver_type
- type fgsl::fgsl_multifit_fdfridge
- type fgsl::fgsl_bspline_workspace
- type fgsl::fgsl_spmatrix
- type fgsl::fgsl_splinalg_itersolve_type
- type fgsl::fgsl_splinalg_itersolve
- type fgsl::fgsl_rstat_quantile_workspace

- type `fgsl::fgsl_rstat_workspace`
- type `fgsl::fgsl_movstat_workspace`
- type `fgsl::fgsl_movstat_function`
fgsl_movstat_function interoperates with *gsl_movstat_function*
- type `fgsl::fgsl_filter_gaussian_workspace`
- type `fgsl::fgsl_filter_median_workspace`
- type `fgsl::fgsl_filter_rmedian_workspace`
- type `fgsl::fgsl_filter_impulse_workspace`

Modules

- module `fgsl`

Variables

- integer, parameter, public `fgsl::fgsl_double` = `c_double`
- integer, parameter, public `fgsl::fgsl_double_complex` = `c_double_complex`
- integer, parameter, public `fgsl::fgsl_extended` = `selected_real_kind(13)`
- integer, parameter, public `fgsl::fgsl_float` = `c_float`
- integer, parameter, public `fgsl::fgsl_int` = `c_int`
- integer, parameter, public `fgsl::fgsl_long` = `c_long`
- integer, parameter, public `fgsl::fgsl_size_t` = `c_size_t`
- integer, parameter, public `fgsl::fgsl_char` = `c_char`
- integer, parameter, public `fgsl::fgsl_strmax` = 128
- integer, parameter, public `fgsl::fgsl_pathmax` = 2048
- character(kind=`fgsl_char`, len= *), parameter, public `fgsl::fgsl_version` = `PACKAGE_VERSION`
- character(kind=`fgsl_char`, len= *), parameter, public `fgsl::fgsl_gslbase` = `GSL_VERSION`
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_success` = 0
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_failure` = -1
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_continue` = -2
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_edom` = 1
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_erange` = 2
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_efault` = 3
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_einval` = 4
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_efactor` = 6
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_esanity` = 7
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_enomem` = 8
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_ebadfunc` = 9
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_erunaway` = 10
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_emaxiter` = 11
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_ezerodiv` = 12
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_ebadtol` = 13
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_etol` = 14
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_eundrflw` = 15
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_eovrflw` = 16
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_ellos` = 17
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_eround` = 18
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_ebadlen` = 19
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_enotsqr` = 20
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_esing` = 21
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_ediverge` = 22
- integer(`fgsl_int`), parameter, public `fgsl::fgsl_eunsup` = 23

- integer(fgsl_int), parameter, public [fgsl::fgsl_eunimpl](#) = 24
- integer(fgsl_int), parameter, public [fgsl::fgsl_ecache](#) = 25
- integer(fgsl_int), parameter, public [fgsl::fgsl_etable](#) = 26
- integer(fgsl_int), parameter, public [fgsl::fgsl_enoproj](#) = 27
- integer(fgsl_int), parameter, public [fgsl::fgsl_enoproj](#) = 28
- integer(fgsl_int), parameter, public [fgsl::fgsl_etolf](#) = 29
- integer(fgsl_int), parameter, public [fgsl::fgsl_etolx](#) = 30
- integer(fgsl_int), parameter, public [fgsl::fgsl_etolg](#) = 31
- integer(fgsl_int), parameter, public [fgsl::fgsl_eof](#) = 32
- real(fgsl_extended), parameter, public [fgsl::m_e](#) = 2.71828182845904523536028747135_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_log2e](#) = 1.44269504088896340735992468100_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_log10e](#) = 0.43429448190325182765112891892_fgsl_↵
extended
- real(fgsl_extended), parameter, public [fgsl::m_sqrt2](#) = 1.41421356237309504880168872421_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_sqrt1_2](#) = 0.70710678118654752440084436210_fgsl_↵
extended
- real(fgsl_extended), parameter, public [fgsl::m_sqrt3](#) = 1.73205080756887729352744634151_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_pi](#) = 3.14159265358979323846264338328_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_pi_2](#) = 1.57079632679489661923132169164_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_pi_4](#) = 0.78539816339744830961566084582_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_sqrtpi](#) = 1.77245385090551602729816748334_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_2_sqrtpi](#) = 1.12837916709551257389615890312_fgsl_↵
extended
- real(fgsl_extended), parameter, public [fgsl::m_1_pi](#) = 0.31830988618379067153776752675_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_2_pi](#) = 0.63661977236758134307553505349_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_ln10](#) = 2.30258509299404568401799145468_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_ln2](#) = 0.69314718055994530941723212146_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_lmpi](#) = 1.14472988584940017414342735135_fgsl_extended
- real(fgsl_extended), parameter, public [fgsl::m_euler](#) = 0.57721566490153286060651209008_fgsl_extended
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_fine_structure](#) = 7.297352533E-3_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_avogadro](#) = 6.02214199E23_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_yotta](#) = 1e24_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_zetta](#) = 1e21_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_exa](#) = 1e18_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_peta](#) = 1e15_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_tera](#) = 1e12_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_giga](#) = 1e9_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_mega](#) = 1e6_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_kilo](#) = 1e3_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_milli](#) = 1e-3_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_micro](#) = 1e-6_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_nano](#) = 1e-9_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_pico](#) = 1e-12_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_femto](#) = 1e-15_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_atto](#) = 1e-18_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_numzepto](#) = 1e-21_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_num_yocto](#) = 1e-24_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_mkxa_speed_of_light](#) = 2.99792458e8_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_mkxa_gravitational_constant](#) = 6.673e-11_fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_mkxa_plancks_constant_h](#) = 6.62606896e-34_fgsl_↵
double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_mkxa_plancks_constant_hbar](#) = 1.05457162825e-34_↵
fgsl_double
- real(fgsl_double), parameter, public [fgsl::fgsl_const_mkxa_astronomical_unit](#) = 1.49597870691e11_fgsl_↵
double

- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_light_year = 9.46053620707e15_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_parsec = 3.08567758135e16_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_grav_accel = 9.80665e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_electron_volt = 1.602176487e-19_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_mass_electron = 9.10938188e-31_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_mass_muon = 1.88353109e-28_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_mass_proton = 1.67262158e-27_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_mass_neutron = 1.67492716e-27_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_rydberg = 2.17987196968e-18_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_boltzmann = 1.3806504e-23_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_bohr_magneton = 9.27400899e-24_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_nuclear_magneton = 5.05078317e-27_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_electron_magnetic_moment = 9.28476362e-24_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_proton_magnetic_moment = 1.410606633e-26_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_molar_gas = 8.314472e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_standard_gas_volume = 2.2710981e-2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_minute = 6e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_hour = 3.6e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_day = 8.64e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_week = 6.048e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_inch = 2.54e-2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_foot = 3.048e-1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_yard = 9.144e-1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_mile = 1.609344e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_nautical_mile = 1.852e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_fathom = 1.8288e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_mil = 2.54e-5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_point = 3.52777777778e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_texpoint = 3.51459803515e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_micron = 1e-6_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_angstrom = 1e-10_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_hectare = 1e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_acre = 4.04685642241e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_barn = 1e-28_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_liter = 1e-3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_us_gallon = 3.78541178402e-3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_quart = 9.46352946004e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_pint = 4.73176473002e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_cup = 2.36588236501e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_fluid_ounce = 2.95735295626e-5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_tablespoon = 1.47867647813e-5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_teaspoon = 4.92892159375e-6_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_canadian_gallon = 4.54609e-3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_uk_gallon = 4.546092e-3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_miles_per_hour = 4.4704e-1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_kilometers_per_hour = 2.77777777778e-1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_knot = 5.14444444444e-1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_pound_mass = 4.5359237e-1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_ounce_mass = 2.8349523125e-2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_ton = 9.0718474e2_fgsl_double`

- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_metric_ton = 1e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_uk_ton = 1.0160469088e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_troy_ounce = 3.1103475e-2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_carat = 2e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_unified_atomic_mass = 1.660538782e-27_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_gram_force = 9.80665e-3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_pound_force = 4.44822161526e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_kilopound_force = 4.44822161526e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_poundal = 1.38255e-1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_calorie = 4.1868e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_btu = 1.05505585262e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_therm = 1.05506e8_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_horsepower = 7.457e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_bar = 1e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_std_atmosphere = 1.01325e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_torr = 1.33322368421e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_meter_of_mercury = 1.33322368421e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_inch_of_mercury = 3.38638815789e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_inch_of_water = 2.490889e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_psi = 6.89475729317e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_poise = 1e-1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_stokes = 1e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_faraday = 9.64853429775e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_electron_charge = 1.602176487e-19_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_gauss = 1e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxastilb = 1e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_lumen = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_lux = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_phot = 1e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_footcandle = 1.076e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_lambert = 1e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_footlambert = 1.07639104e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_curie = 3.7e10_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_roentgen = 2.58e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_rad = 1e-2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_solar_mass = 1.98892e30_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_bohr_radius = 5.291772083e-11_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_newton = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_dyne = 1e-5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_joule = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_erg = 1e-7_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_stefan_boltzmann_constant = 5.67040047374e-8_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_thomson_cross_section = 6.65245893699e-29_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_vacuum_permittivity = 8.854187817e-12_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_vacuum_permeability = 1.25663706144e-6_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_mkxa_debye = 3.33564095198e-30_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_speed_of_light = 2.99792458e10_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_gravitational_constant = 6.673e-8_fgsl_double`

- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_plancks_constant_h = 6.62606896e-27_fgsl_double ↵`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_plancks_constant_hbar = 1.05457162825e-27_fgsl_double ↵`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_astronomical_unit = 1.49597870691e13_fgsl_double ↵`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_light_year = 9.46053620707e17_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_parsec = 3.08567758135e18_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_grav_accel = 9.80665e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_electron_volt = 1.602176487e-12_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mass_electron = 9.10938188e-28_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mass_muon = 1.88353109e-25_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mass_proton = 1.67262158e-24_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mass_neutron = 1.67492716e-24_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_rydberg = 2.17987196968e-11_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_boltzmann = 1.3806504e-16_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_bohr_magneton = 9.27400899e-21_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_nuclear_magneton = 5.05078317e-24_fgsl_double ↵`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_electron_magnetic_moment = 9.28476362e-21_fgsl_double ↵`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_proton_magnetic_moment = 1.410606633e-23_fgsl_double ↵`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_molar_gas = 8.314472e7_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_standard_gas_volume = 2.2710981e4_fgsl_double ↵`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_minute = 6e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_hour = 3.6e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_day = 8.64e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_week = 6.048e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_inch = 2.54e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_foot = 3.048e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_yard = 9.144e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mile = 1.609344e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_nautical_mile = 1.852e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_fathom = 1.8288e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_mil = 2.54e-3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_point = 3.52777777778e-2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_texpoint = 3.51459803515e-2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_micron = 1e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_angstrom = 1e-8_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_hectare = 1e8_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_acre = 4.04685642241e7_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_barn = 1e-24_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_liter = 1e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_us_gallon = 3.78541178402e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_quart = 9.46352946004e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_pint = 4.73176473002e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_cup = 2.36588236501e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_fluid_ounce = 2.95735295626e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_tablespoon = 1.47867647813e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_teaspoon = 4.92892159375e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_canadian_gallon = 4.54609e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_uk_gallon = 4.546092e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_miles_per_hour = 4.4704e1_fgsl_double`

- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_kilometers_per_hour = 2.77777777778e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_knot = 5.14444444444e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_pound_mass = 4.5359237e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_ounce_mass = 2.8349523125e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_ton = 9.0718474e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_metric_ton = 1e6_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_uk_ton = 1.0160469088e6_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_troy_ounce = 3.1103475e1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_carat = 2e-1_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_unified_atomic_mass = 1.660538782e-24_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_gram_force = 9.80665e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_pound_force = 4.44822161526e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_kilopound_force = 4.44822161526e8_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_poundal = 1.38255e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_calorie = 4.1868e7_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_btu = 1.05505585262e10_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_therm = 1.05506e15_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_horsepower = 7.457e9_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_bar = 1e6_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_std_atmosphere = 1.01325e6_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_torr = 1.33322368421e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_meter_of_mercury = 1.33322368421e6_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_inch_of_mercury = 3.38638815789e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_inch_of_water = 2.490889e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_psi = 6.89475729317e4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_poise = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_stokes = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_faraday = 9.64853429775e3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_electron_charge = 1.602176487e-20_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_gauss = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsmstilb = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_lumen = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_lux = 1e-4_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_phot = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_footcandle = 1.076e-3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_lambert = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_footlambert = 1.07639104e-3_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_curie = 3.7e10_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_roentgen = 2.58e-8_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_rad = 1e2_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_solar_mass = 1.98892e33_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_bohr_radius = 5.291772083e-9_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_newton = 1e5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_dyne = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_joule = 1e7_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_erg = 1e0_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_stefan_boltzmann_constant = 5.67040047374e-5_fgsl_double`
- `real(fgsl_double), parameter, public fgsl::fgsl_const_cgsm_thomson_cross_section = 6.65245893699e-25_fgsl_double`
- `type(fgsl_mode_t), parameter, public fgsl::fgsl_prec_double = fgsl_mode_t(0)`

- type(fgsl_mode_t), parameter, public `fgsl::fgsl_prec_single` = fgsl_mode_t(1)
- type(fgsl_mode_t), parameter, public `fgsl::fgsl_prec_approx` = fgsl_mode_t(2)
- type(fgsl_sf_legendre_t), parameter, public `fgsl::fgsl_sf_legendre_schmidt` = fgsl_sf_legendre_t(0)
- type(fgsl_sf_legendre_t), parameter, public `fgsl::fgsl_sf_legendre_spharm` = fgsl_sf_legendre_t(1)
- type(fgsl_sf_legendre_t), parameter, public `fgsl::fgsl_sf_legendre_full` = fgsl_sf_legendre_t(2)
- type(fgsl_sf_legendre_t), parameter, public `fgsl::fgsl_sf_legendre_none` = fgsl_sf_legendre_t(3)
- integer(fgsl_int), parameter, public `fgsl::fgsl_sf_legendre_schmidt` = 0
- integer(fgsl_int), parameter, public `fgsl::fgsl_sf_legendre_spharm` = 1
- integer(fgsl_int), parameter, public `fgsl::fgsl_sf_legendre_full` = 2
- integer(fgsl_int), parameter, public `fgsl::fgsl_sf_legendre_none` = 3
- type(fgsl_multilarge_linear_type), parameter, public `fgsl::fgsl_multilarge_linear_normal` = fgsl_multilarge_linear_type(1)
- type(fgsl_multilarge_linear_type), parameter, public `fgsl::fgsl_multilarge_linear_tsqr` = fgsl_multilarge_linear_type(2)
- type(fgsl_interp_type), parameter, public `fgsl::fgsl_interp_linear` = fgsl_interp_type(1)
- type(fgsl_interp_type), parameter, public `fgsl::fgsl_interp_polynomial` = fgsl_interp_type(2)
- type(fgsl_interp_type), parameter, public `fgsl::fgsl_interp_cspline` = fgsl_interp_type(3)
- type(fgsl_interp_type), parameter, public `fgsl::fgsl_interp_cspline_periodic` = fgsl_interp_type(4)
- type(fgsl_interp_type), parameter, public `fgsl::fgsl_interp_akima` = fgsl_interp_type(5)
- type(fgsl_interp_type), parameter, public `fgsl::fgsl_interp_akima_periodic` = fgsl_interp_type(6)
- type(fgsl_interp_type), parameter, public `fgsl::fgsl_interp_steffen` = fgsl_interp_type(7)
- type(fgsl_interp2d_type), parameter, public `fgsl::fgsl_interp2d_bilinear` = fgsl_interp2d_type(1)
- type(fgsl_interp2d_type), parameter, public `fgsl::fgsl_interp2d_bicubic` = fgsl_interp2d_type(2)
- type(fgsl_multifit_robust_type), parameter, public `fgsl::fgsl_multifit_robust_default` = fgsl_multifit_robust_type(1)
- type(fgsl_multifit_robust_type), parameter, public `fgsl::fgsl_multifit_robust_bisquare` = fgsl_multifit_robust_type(2)
- type(fgsl_multifit_robust_type), parameter, public `fgsl::fgsl_multifit_robust_cauchy` = fgsl_multifit_robust_type(3)
- type(fgsl_multifit_robust_type), parameter, public `fgsl::fgsl_multifit_robust_fair` = fgsl_multifit_robust_type(4)
- type(fgsl_multifit_robust_type), parameter, public `fgsl::fgsl_multifit_robust_huber` = fgsl_multifit_robust_type(5)
- type(fgsl_multifit_robust_type), parameter, public `fgsl::fgsl_multifit_robust_ols` = fgsl_multifit_robust_type(6)
- type(fgsl_multifit_robust_type), parameter, public `fgsl::fgsl_multifit_robust_welsch` = fgsl_multifit_robust_type(7)
- integer(fgsl_int), parameter, public `fgsl::cblasrowmajor` = 101
- integer(fgsl_int), parameter, public `fgsl::cblascolmajor` = 102
- integer(fgsl_int), parameter, public `fgsl::cblasnotrans` = 111
- integer(fgsl_int), parameter, public `fgsl::cblastrans` = 112
- integer(fgsl_int), parameter, public `fgsl::cblasconjtrans` = 113
- integer(fgsl_int), parameter, public `fgsl::cblasupper` = 121
- integer(fgsl_int), parameter, public `fgsl::cblaslower` = 122
- integer(fgsl_int), parameter, public `fgsl::cblasnonunit` = 131
- integer(fgsl_int), parameter, public `fgsl::cblasunit` = 132
- integer(fgsl_int), parameter, public `fgsl::cblasleft` = 141
- integer(fgsl_int), parameter, public `fgsl::cblasright` = 142
- integer(c_int), parameter, public `fgsl::fgsl_eigen_sort_val_asc` = 0
- integer(c_int), parameter, public `fgsl::fgsl_eigen_sort_val_desc` = 1
- integer(c_int), parameter, public `fgsl::fgsl_eigen_sort_abs_asc` = 2
- integer(c_int), parameter, public `fgsl::fgsl_eigen_sort_abs_desc` = 3
- integer(fgsl_int), parameter, public `fgsl::fgsl_integ_gauss15` = 1
- integer(fgsl_int), parameter, public `fgsl::fgsl_integ_gauss21` = 2
- integer(fgsl_int), parameter, public `fgsl::fgsl_integ_gauss31` = 3
- integer(fgsl_int), parameter, public `fgsl::fgsl_integ_gauss41` = 4
- integer(fgsl_int), parameter, public `fgsl::fgsl_integ_gauss51` = 5

- integer(fgsl_int), parameter, public [fgsl::fgsl_integ_gauss61](#) = 6
- integer(fgsl_int), parameter, public [fgsl::fgsl_integ_cosine](#) = 0
- integer(fgsl_int), parameter, public [fgsl::fgsl_integ_sine](#) = 1
- integer(fgsl_int), parameter, public [fgsl::fgsl_integration_fixed_legendre](#) = 1
- integer(fgsl_int), parameter, public [fgsl::fgsl_integration_fixed_chebyshev](#) = 2
- integer(fgsl_int), parameter, public [fgsl::fgsl_integration_fixed_gegenbauer](#) = 3
- integer(fgsl_int), parameter, public [fgsl::fgsl_integration_fixed_jacobi](#) = 4
- integer(fgsl_int), parameter, public [fgsl::fgsl_integration_fixed_laguerre](#) = 5
- integer(fgsl_int), parameter, public [fgsl::fgsl_integration_fixed_hermite](#) = 6
- integer(fgsl_int), parameter, public [fgsl::fgsl_integration_fixed_exponential](#) = 7
- integer(fgsl_int), parameter, public [fgsl::fgsl_integration_fixed_rational](#) = 8
- integer(fgsl_int), parameter, public [fgsl::fgsl_integration_fixed_chebyshev2](#) = 9
- type(fgsl_rng_type), public [fgsl::fgsl_rng_default](#) = fgsl_rng_type(c_null_ptr, -1)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_borosh13](#) = fgsl_rng_type(c_null_ptr, 1)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_coveyou](#) = fgsl_rng_type(c_null_ptr, 2)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_cmrg](#) = fgsl_rng_type(c_null_ptr, 3)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_fishman18](#) = fgsl_rng_type(c_null_ptr, 4)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_fishman20](#) = fgsl_rng_type(c_null_ptr, 5)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_fishman2x](#) = fgsl_rng_type(c_null_ptr, 6)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_gfsr4](#) = fgsl_rng_type(c_null_ptr, 7)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_knuthran](#) = fgsl_rng_type(c_null_ptr, 8)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_knuthran2](#) = fgsl_rng_type(c_null_ptr, 9)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_lecuyer21](#) = fgsl_rng_type(c_null_ptr, 10)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_minstd](#) = fgsl_rng_type(c_null_ptr, 11)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_mrg](#) = fgsl_rng_type(c_null_ptr, 12)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_mt19937](#) = fgsl_rng_type(c_null_ptr, 13)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_mt19937_1999](#) = fgsl_rng_type(c_null_ptr, 14)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_mt19937_1998](#) = fgsl_rng_type(c_null_ptr, 15)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_r250](#) = fgsl_rng_type(c_null_ptr, 16)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ran0](#) = fgsl_rng_type(c_null_ptr, 17)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ran1](#) = fgsl_rng_type(c_null_ptr, 18)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ran2](#) = fgsl_rng_type(c_null_ptr, 19)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ran3](#) = fgsl_rng_type(c_null_ptr, 20)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_rand](#) = fgsl_rng_type(c_null_ptr, 21)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_rand48](#) = fgsl_rng_type(c_null_ptr, 22)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random128_bsd](#) = fgsl_rng_type(c_null_ptr, 23)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random128_glibc2](#) = fgsl_rng_type(c_null_ptr, 24)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random128_libc5](#) = fgsl_rng_type(c_null_ptr, 25)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random256_bsd](#) = fgsl_rng_type(c_null_ptr, 26)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random256_glibc2](#) = fgsl_rng_type(c_null_ptr, 27)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random256_libc5](#) = fgsl_rng_type(c_null_ptr, 28)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random32_bsd](#) = fgsl_rng_type(c_null_ptr, 29)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random32_glibc2](#) = fgsl_rng_type(c_null_ptr, 30)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random32_libc5](#) = fgsl_rng_type(c_null_ptr, 31)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random64_bsd](#) = fgsl_rng_type(c_null_ptr, 32)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random64_glibc2](#) = fgsl_rng_type(c_null_ptr, 33)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random64_libc5](#) = fgsl_rng_type(c_null_ptr, 34)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random8_bsd](#) = fgsl_rng_type(c_null_ptr, 35)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random8_glibc2](#) = fgsl_rng_type(c_null_ptr, 36)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random8_libc5](#) = fgsl_rng_type(c_null_ptr, 37)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random_bsd](#) = fgsl_rng_type(c_null_ptr, 38)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random_glibc2](#) = fgsl_rng_type(c_null_ptr, 39)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_random_libc5](#) = fgsl_rng_type(c_null_ptr, 40)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_randu](#) = fgsl_rng_type(c_null_ptr, 41)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ranf](#) = fgsl_rng_type(c_null_ptr, 42)

- type(fgsl_rng_type), public [fgsl::fgsl_rng_ranlux](#) = fgsl_rng_type(c_null_ptr, 43)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ranlux389](#) = fgsl_rng_type(c_null_ptr, 44)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ranlxd1](#) = fgsl_rng_type(c_null_ptr, 45)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ranlxd2](#) = fgsl_rng_type(c_null_ptr, 46)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ranlxs0](#) = fgsl_rng_type(c_null_ptr, 47)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ranlxs1](#) = fgsl_rng_type(c_null_ptr, 48)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ranlxs2](#) = fgsl_rng_type(c_null_ptr, 49)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_ranmar](#) = fgsl_rng_type(c_null_ptr, 50)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_slatec](#) = fgsl_rng_type(c_null_ptr, 51)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_taus](#) = fgsl_rng_type(c_null_ptr, 52)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_taus2](#) = fgsl_rng_type(c_null_ptr, 53)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_taus113](#) = fgsl_rng_type(c_null_ptr, 54)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_transputer](#) = fgsl_rng_type(c_null_ptr, 55)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_tt800](#) = fgsl_rng_type(c_null_ptr, 56)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_uni](#) = fgsl_rng_type(c_null_ptr, 57)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_uni32](#) = fgsl_rng_type(c_null_ptr, 58)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_vax](#) = fgsl_rng_type(c_null_ptr, 59)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_waterman14](#) = fgsl_rng_type(c_null_ptr, 60)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_zuf](#) = fgsl_rng_type(c_null_ptr, 61)
- type(fgsl_rng_type), public [fgsl::fgsl_rng_knuthran2002](#) = fgsl_rng_type(c_null_ptr, 62)
- integer(fgsl_long), bind(C, name='fgsl_rng_default_seed'), public [fgsl::fgsl_rng_default_seed](#)
- type(fgsl_qrng_type), parameter, public [fgsl::fgsl_qrng_niederreiter_2](#) = fgsl_qrng_type(1)
- type(fgsl_qrng_type), parameter, public [fgsl::fgsl_qrng_sobol](#) = fgsl_qrng_type(2)
- type(fgsl_qrng_type), parameter, public [fgsl::fgsl_qrng_halton](#) = fgsl_qrng_type(3)
- type(fgsl_qrng_type), parameter, public [fgsl::fgsl_qrng_reversehalton](#) = fgsl_qrng_type(4)
- integer(c_int), parameter, public [fgsl::fgsl_vegas_mode_importance](#) = 1
- integer(c_int), parameter, public [fgsl::fgsl_vegas_mode_importance_only](#) = 0
- integer(c_int), parameter, public [fgsl::fgsl_vegas_mode_stratified](#) = -1
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_rk2](#) = fgsl_odeiv2_step_type(1)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_rk4](#) = fgsl_odeiv2_step_type(2)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_rkf45](#) = fgsl_odeiv2_step_type(3)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_rkck](#) = fgsl_odeiv2_step_type(4)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_rk8pd](#) = fgsl_odeiv2_step_type(5)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_rk1imp](#) = fgsl_odeiv2_step_type(6)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_rk2imp](#) = fgsl_odeiv2_step_type(7)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_rk4imp](#) = fgsl_odeiv2_step_type(8)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_bsimp](#) = fgsl_odeiv2_step_type(9)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_msadams](#) = fgsl_odeiv2_step_type(10)
- type(fgsl_odeiv2_step_type), parameter, public [fgsl::fgsl_odeiv2_step_msbdf](#) = fgsl_odeiv2_step_type(11)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_rk2](#) = fgsl_odeiv_step_type(1)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_rk4](#) = fgsl_odeiv_step_type(2)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_rkf45](#) = fgsl_odeiv_step_type(3)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_rkck](#) = fgsl_odeiv_step_type(4)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_rk8pd](#) = fgsl_odeiv_step_type(5)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_rk2imp](#) = fgsl_odeiv_step_type(6)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_rk2simp](#) = fgsl_odeiv_step_type(7)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_rk4imp](#) = fgsl_odeiv_step_type(8)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_bsimp](#) = fgsl_odeiv_step_type(9)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_gear1](#) = fgsl_odeiv_step_type(10)
- type(fgsl_odeiv_step_type), parameter, public [fgsl::fgsl_odeiv_step_gear2](#) = fgsl_odeiv_step_type(11)
- integer(fgsl_int), parameter, public [fgsl::fgsl_odeiv_hadj_inc](#) = 1
- integer(fgsl_int), parameter, public [fgsl::fgsl_odeiv_hadj_nil](#) = 0
- integer(fgsl_int), parameter, public [fgsl::fgsl_odeiv_hadj_dec](#) = -1
- type(fgsl_wavelet_type), parameter, public [fgsl::fgsl_wavelet_daubechies](#) = fgsl_wavelet_type(1)

- type(fgsl_wavelet_type), parameter, public [fgsl::fgsl_wavelet_daubechies_centered](#) = fgsl_wavelet_type(2)
- type(fgsl_wavelet_type), parameter, public [fgsl::fgsl_wavelet_haar](#) = fgsl_wavelet_type(3)
- type(fgsl_wavelet_type), parameter, public [fgsl::fgsl_wavelet_haar_centered](#) = fgsl_wavelet_type(4)
- type(fgsl_wavelet_type), parameter, public [fgsl::fgsl_wavelet_bspline](#) = fgsl_wavelet_type(5)
- type(fgsl_wavelet_type), parameter, public [fgsl::fgsl_wavelet_bspline_centered](#) = fgsl_wavelet_type(6)
- type(fgsl_root_fsolver_type), parameter, public [fgsl::fgsl_root_fsolver_bisection](#) = fgsl_root_fsolver_type(1)
- type(fgsl_root_fsolver_type), parameter, public [fgsl::fgsl_root_fsolver_brent](#) = fgsl_root_fsolver_type(2)
- type(fgsl_root_fsolver_type), parameter, public [fgsl::fgsl_root_fsolver_falsepos](#) = fgsl_root_fsolver_type(3)
- type(fgsl_root_fdfsolver_type), parameter, public [fgsl::fgsl_root_fdfsolver_newton](#) = fgsl_root_fdfsolver_↵
type(1)
- type(fgsl_root_fdfsolver_type), parameter, public [fgsl::fgsl_root_fdfsolver_secant](#) = fgsl_root_fdfsolver_↵
type(2)
- type(fgsl_root_fdfsolver_type), parameter, public [fgsl::fgsl_root_fdfsolver_steffenson](#) = fgsl_root_fdfsolver_↵
type(3)
- type(fgsl_min_fminimizer_type), parameter, public [fgsl::fgsl_min_fminimizer_goldensection](#) = fgsl_min_↵
fminimizer_type(1)
- type(fgsl_min_fminimizer_type), parameter, public [fgsl::fgsl_min_fminimizer_brent](#) = fgsl_min_fminimizer_↵
type(2)
- type(fgsl_min_fminimizer_type), parameter, public [fgsl::fgsl_min_fminimizer_quad_golden](#) = fgsl_min_↵
fminimizer_type(3)
- type(fgsl_multiroot_fsolver_type), parameter, public [fgsl::fgsl_multiroot_fsolver_dnewton](#) = fgsl_multiroot_↵
fsolver_type(1)
- type(fgsl_multiroot_fsolver_type), parameter, public [fgsl::fgsl_multiroot_fsolver_broyden](#) = fgsl_multiroot_↵
fsolver_type(2)
- type(fgsl_multiroot_fsolver_type), parameter, public [fgsl::fgsl_multiroot_fsolver_hybrid](#) = fgsl_multiroot_↵
fsolver_type(3)
- type(fgsl_multiroot_fsolver_type), parameter, public [fgsl::fgsl_multiroot_fsolver_hybrids](#) = fgsl_multiroot_↵
fsolver_type(4)
- type(fgsl_multiroot_fdfsolver_type), parameter, public [fgsl::fgsl_multiroot_fdfsolver_newton](#) = fgsl_multiroot_↵
_fdfsolver_type(1)
- type(fgsl_multiroot_fdfsolver_type), parameter, public [fgsl::fgsl_multiroot_fdfsolver_gnewton](#) = fgsl_↵
multiroot_fdfsolver_type(2)
- type(fgsl_multiroot_fdfsolver_type), parameter, public [fgsl::fgsl_multiroot_fdfsolver_hybridj](#) = fgsl_multiroot_↵
_fdfsolver_type(3)
- type(fgsl_multiroot_fdfsolver_type), parameter, public [fgsl::fgsl_multiroot_fdfsolver_hybridjsj](#) = fgsl_↵
multiroot_fdfsolver_type(4)
- type(fgsl_multimin_fminimizer_type), parameter, public [fgsl::fgsl_multimin_fminimizer_nmsimplex](#) = fgsl_↵
multimin_fminimizer_type(1)
- type(fgsl_multimin_fminimizer_type), parameter, public [fgsl::fgsl_multimin_fminimizer_nmsimplex2](#) = fgsl_↵
multimin_fminimizer_type(2)
- type(fgsl_multimin_fminimizer_type), parameter, public [fgsl::fgsl_multimin_fminimizer_nmsimplex2rand](#) =
fgsl_multimin_fminimizer_type(3)
- type(fgsl_multimin_fdfminimizer_type), parameter, public [fgsl::fgsl_multimin_fdfminimizer_steepest_descent](#)
= fgsl_multimin_fdfminimizer_type(1)
- type(fgsl_multimin_fdfminimizer_type), parameter, public [fgsl::fgsl_multimin_fdfminimizer_conjugate_pr](#) =
fgsl_multimin_fdfminimizer_type(2)
- type(fgsl_multimin_fdfminimizer_type), parameter, public [fgsl::fgsl_multimin_fdfminimizer_conjugate_fr](#) =
fgsl_multimin_fdfminimizer_type(3)
- type(fgsl_multimin_fdfminimizer_type), parameter, public [fgsl::fgsl_multimin_fdfminimizer_vector_bfgs](#) =
fgsl_multimin_fdfminimizer_type(4)
- type(fgsl_multimin_fdfminimizer_type), parameter, public [fgsl::fgsl_multimin_fdfminimizer_vector_bfgs2](#) =
fgsl_multimin_fdfminimizer_type(5)
- type(fgsl_multifit_nlinear_trs), parameter, public [fgsl::fgsl_multifit_nlinear_trs_lm](#) = fgsl_multifit_nlinear_trs(1)
- type(fgsl_multifit_nlinear_trs), parameter, public [fgsl::fgsl_multifit_nlinear_trs_lmaccel](#) = fgsl_multifit_↵
nlinear_trs(2)

- type(fgsl_multifit_nlinear_trs), parameter, public `fgsl::fgsl_multifit_nlinear_trs_dogleg` = fgsl_multifit_nlinear↵
_trs(3)
- type(fgsl_multifit_nlinear_trs), parameter, public `fgsl::fgsl_multifit_nlinear_trs_ddogleg` = fgsl_multifit_↵
nlinear_trs(4)
- type(fgsl_multifit_nlinear_trs), parameter, public `fgsl::fgsl_multifit_nlinear_trs_subspace2d` = fgsl_multifit_↵
nlinear_trs(5)
- type(fgsl_multilarge_nlinear_trs), parameter, public `fgsl::fgsl_multilarge_nlinear_trs_lm` = fgsl_multilarge_↵
nlinear_trs(1)
- type(fgsl_multilarge_nlinear_trs), parameter, public `fgsl::fgsl_multilarge_nlinear_trs_lmaccel` = fgsl_↵
multilarge_nlinear_trs(2)
- type(fgsl_multilarge_nlinear_trs), parameter, public `fgsl::fgsl_multilarge_nlinear_trs_dogleg` = fgsl_↵
multilarge_nlinear_trs(3)
- type(fgsl_multilarge_nlinear_trs), parameter, public `fgsl::fgsl_multilarge_nlinear_trs_ddogleg` = fgsl_↵
multilarge_nlinear_trs(4)
- type(fgsl_multilarge_nlinear_trs), parameter, public `fgsl::fgsl_multilarge_nlinear_trs_subspace2d` = fgsl_↵
multilarge_nlinear_trs(5)
- type(fgsl_multilarge_nlinear_trs), parameter, public `fgsl::fgsl_multilarge_nlinear_trs_cgst` = fgsl_multilarge_↵
nlinear_trs(6)
- type(fgsl_multifit_nlinear_scale), parameter, public `fgsl::fgsl_multifit_nlinear_scale_levenberg` = fgsl_multifit_↵
nlinear_scale(1)
- type(fgsl_multifit_nlinear_scale), parameter, public `fgsl::fgsl_multifit_nlinear_scale_marquardt` = fgsl_↵
multifit_nlinear_scale(2)
- type(fgsl_multifit_nlinear_scale), parameter, public `fgsl::fgsl_multifit_nlinear_scale_more` = fgsl_multifit_↵
nlinear_scale(3)
- type(fgsl_multilarge_nlinear_scale), parameter, public `fgsl::fgsl_multilarge_nlinear_scale_levenberg` = fgsl_↵
_multilarge_nlinear_scale(1)
- type(fgsl_multilarge_nlinear_scale), parameter, public `fgsl::fgsl_multilarge_nlinear_scale_marquardt` = fgsl_↵
_multilarge_nlinear_scale(2)
- type(fgsl_multilarge_nlinear_scale), parameter, public `fgsl::fgsl_multilarge_nlinear_scale_more` = fgsl_↵
multilarge_nlinear_scale(3)
- type(fgsl_multifit_nlinear_solver), parameter, public `fgsl::fgsl_multifit_nlinear_solver_cholesky` = fgsl_↵
multifit_nlinear_solver(1)
- type(fgsl_multifit_nlinear_solver), parameter, public `fgsl::fgsl_multifit_nlinear_solver_qr` = fgsl_multifit_↵
nlinear_solver(2)
- type(fgsl_multifit_nlinear_solver), parameter, public `fgsl::fgsl_multifit_nlinear_solver_svd` = fgsl_multifit_↵
nlinear_solver(3)
- integer(fgsl_int), parameter, public `fgsl::fgsl_multifit_nlinear_fwdiff` = 0
- integer(fgsl_int), parameter, public `fgsl::fgsl_multifit_nlinear_ctrdiff` = 1
- type(fgsl_multilarge_nlinear_solver), parameter, public `fgsl::fgsl_multilarge_nlinear_solver_cholesky` = fgsl_↵
_multilarge_nlinear_solver(1)
- type(fgsl_multifit_fdfsolver_type), parameter, public `fgsl::fgsl_multifit_fdfsolver_lmder` = fgsl_multifit_↵
fdfsolver_type(1)
- type(fgsl_multifit_fdfsolver_type), parameter, public `fgsl::fgsl_multifit_fdfsolver_lmsder` = fgsl_multifit_↵
fdfsolver_type(2)
- type(fgsl_multifit_fdfsolver_type), parameter, public `fgsl::fgsl_multifit_fdfsolver_lmniel` = fgsl_multifit_↵
fdfsolver_type(3)
- integer(fgsl_size_t), parameter, public `fgsl::fgsl_spmatrix_triplet` = 0
- integer(fgsl_size_t), parameter, public `fgsl::fgsl_spmatrix_ccs` = 1
- integer(fgsl_size_t), parameter, public `fgsl::fgsl_spmatrix_crs` = 2
- integer(fgsl_size_t), parameter, public `fgsl::fgsl_spmatrix_type_coo` = fgsl_spmatrix_triplet
- integer(fgsl_size_t), parameter, public `fgsl::fgsl_spmatrix_type_csc` = fgsl_spmatrix_ccs
- integer(fgsl_size_t), parameter, public `fgsl::fgsl_spmatrix_type_csr` = fgsl_spmatrix_crs
- type(fgsl_splinalg_itersolve_type), parameter, public `fgsl::fgsl_splinalg_itersolve_gmres` = fgsl_splinalg_↵
itersolve_type(1)
- integer(fgsl_int), parameter, public `fgsl::fgsl_movstat_end_padzero` = 0
- integer(fgsl_int), parameter, public `fgsl::fgsl_movstat_end_padvalue` = 1

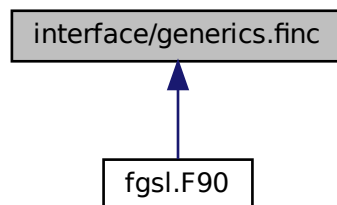
- integer(fgsl_int), parameter, public [fgsl::fgsl_movstat_end_truncate](#) = 2
- integer(fgsl_int), parameter, public [fgsl::fgsl_filter_end_padzero](#) = 0

Note: fgsl_movstat_accum is not matched since the publicized interface does not make explicit use of accumulators.

- integer(fgsl_int), parameter, public [fgsl::fgsl_filter_end_padvalue](#) = 1
- integer(fgsl_int), parameter, public [fgsl::fgsl_filter_end_truncate](#) = 2
- integer(fgsl_int), parameter, public [fgsl::fgsl_filter_scale_mad](#) = 0
- integer(fgsl_int), parameter, public [fgsl::fgsl_filter_scale_iqr](#) = 1
- integer(fgsl_int), parameter, public [fgsl::fgsl_filter_scale_sn](#) = 2
- integer(fgsl_int), parameter, public [fgsl::fgsl_filter_scale_qn](#) = 3

49.86 interface/generics.finc File Reference

This graph shows which files directly or indirectly include this file:



Data Types

- interface [fgsl_well_defined](#)
- interface [fgsl_multifit_nlinear_type](#)
- interface [fgsl_multilarge_nlinear_type](#)
- interface [fgsl_sizeof](#)
- interface [fgsl_obj_c_ptr](#)
- interface [assignment\(=\)](#)
- interface [fgsl_vector_init](#)
- interface [fgsl_vector_free](#)
- interface [fgsl_matrix_init](#)
- interface [fgsl_matrix_free](#)
- interface [fgsl_vector_to_fptr](#)
- interface [fgsl_vector_align](#)
- interface [fgsl_matrix_align](#)
- interface [fgsl_matrix_to_fptr](#)
- interface [fgsl_permute](#)
- interface [fgsl_permute_inverse](#)
- interface [fgsl_sort](#)
- interface [fgsl_sort_index](#)
- interface [fgsl_sort_smallest](#)
- interface [fgsl_sort_smallest_index](#)
- interface [fgsl_sort_largest](#)

- interface [fgsl_sort_largest_index](#)
- interface [fgsl_ran_shuffle](#)
- interface [fgsl_ieee_fprintf](#)
- interface [fgsl_ieee_printf](#)
- interface [fgsl_multifit_fdfsolver_dif_df](#)
- interface [fgsl_multifit_eval_wf](#)
- interface [fgsl_multifit_eval_wdf](#)

Index

adj_rsq
 fgsl::fgsl_multifit_robust_stats, 219
api/array.finc, 277
api/bspline.finc, 299
api/chebyshev.finc, 304
api/complex.finc, 310
api/deriv.finc, 318
api/dht.finc, 320
api/eigen.finc, 324
api/error.finc, 343
api/fft.finc, 346
api/filter.finc, 358
api/fit.finc, 364
api/histogram.finc, 368
api/ieee.finc, 398
api/integration.finc, 401
api/interp.finc, 420
api/io.finc, 455
api/linalg.finc, 459
api/math.finc, 532
api/min.finc, 542
api/misc.finc, 548
api/montecarlo.finc, 551
api/movstat.finc, 561
api/multifit.finc, 570
api/multilarge.finc, 611
api/multimin.finc, 619
api/multiroots.finc, 629
api/nlfit.finc, 638
api/ntuple.finc, 656
api/ode.finc, 662
api/permutation.finc, 688
api/poly.finc, 714
api/rng.finc, 721
api/roots.finc, 800
api/rstat.finc, 808
api/siman.finc, 815
api/sort.finc, 817
api/specfunc.finc, 827
api/splinalg.finc, 987
api/spmatrix.finc, 990
api/statistics.finc, 1005
api/sum_levin.finc, 1025
api/wavelet.finc, 1029
array.finc
 fgsl_aux_matrix_complex_align, 293
 fgsl_aux_matrix_complex_free, 293
 fgsl_aux_matrix_complex_init, 294
 fgsl_aux_matrix_complex_size, 294
 fgsl_aux_matrix_double_align, 294
 fgsl_aux_matrix_double_free, 294
 fgsl_aux_matrix_double_init, 294
 fgsl_aux_matrix_double_size, 294
 fgsl_aux_vector_complex_align, 295
 fgsl_aux_vector_complex_free, 295
 fgsl_aux_vector_complex_init, 295
 fgsl_aux_vector_complex_size, 295
 fgsl_aux_vector_complex_stride, 295
 fgsl_aux_vector_double_align, 295
 fgsl_aux_vector_double_free, 296
 fgsl_aux_vector_double_init, 296
 fgsl_aux_vector_double_size, 296
 fgsl_aux_vector_double_stride, 296
 fgsl_aux_vector_int_align, 296
 fgsl_aux_vector_int_free, 296
 fgsl_aux_vector_int_init, 297
 fgsl_aux_vector_int_size, 297
 fgsl_aux_vector_int_stride, 297
 fgsl_matrix_align, 279
 fgsl_matrix_c_ptr, 280
 fgsl_matrix_complex_align, 280
 fgsl_matrix_complex_c_ptr, 281
 fgsl_matrix_complex_free, 281
 fgsl_matrix_complex_init, 281
 fgsl_matrix_complex_init_legacy, 281
 fgsl_matrix_complex_pointer_align, 282
 fgsl_matrix_complex_status, 282
 fgsl_matrix_complex_to_array, 282
 fgsl_matrix_complex_to_fptr, 283
 fgsl_matrix_free, 283
 fgsl_matrix_get_size1, 283
 fgsl_matrix_get_size2, 283
 fgsl_matrix_get_tda, 283
 fgsl_matrix_init, 283
 fgsl_matrix_init_legacy, 284
 fgsl_matrix_pointer_align, 284
 fgsl_matrix_status, 285
 fgsl_matrix_to_array, 285
 fgsl_matrix_to_fptr, 285
 fgsl_sizeof_matrix, 285
 fgsl_sizeof_matrix_complex, 285
 fgsl_sizeof_vector, 286
 fgsl_sizeof_vector_complex, 286
 fgsl_vector_align, 286
 fgsl_vector_c_ptr, 287
 fgsl_vector_complex_align, 287
 fgsl_vector_complex_c_ptr, 287
 fgsl_vector_complex_free, 287

- fgsl_vector_complex_init, 288
- fgsl_vector_complex_init_legacy, 288
- fgsl_vector_complex_pointer_align, 288
- fgsl_vector_complex_status, 289
- fgsl_vector_complex_to_array, 289
- fgsl_vector_complex_to_fptr, 289
- fgsl_vector_free, 289
- fgsl_vector_get_size, 289
- fgsl_vector_get_stride, 289
- fgsl_vector_init, 290
- fgsl_vector_init_legacy, 290
- fgsl_vector_int_free, 290
- fgsl_vector_int_init, 290
- fgsl_vector_int_status, 291
- fgsl_vector_int_to_fptr, 291
- fgsl_vector_pointer_align, 291
- fgsl_vector_status, 291
- fgsl_vector_to_array, 292
- fgsl_vector_to_fptr, 292
- gsl_aux_sizeof_matrix, 297
- gsl_aux_sizeof_matrix_complex, 297
- gsl_aux_sizeof_vector, 297
- gsl_aux_sizeof_vector_complex, 297
- gsl_matrix_complex_get, 298
- gsl_matrix_complex_ptr, 298
- gsl_matrix_get, 298
- gsl_matrix_ptr, 298
- gsl_vector_complex_get, 298
- gsl_vector_complex_ptr, 298
- gsl_vector_get, 299
- gsl_vector_int_ptr, 299
- gsl_vector_ptr, 299
- assignment(=), 181
 - complex_to_fgsl_complex, 181
 - fgsl_complex_to_complex, 181
 - fgsl_matrix_complex_to_array, 181
 - fgsl_matrix_to_array, 181
 - fgsl_vector_complex_to_array, 182
 - fgsl_vector_to_array, 182
 - gsl_sf_to_fgsl_sf, 182
 - gsl_sfe10_to_fgsl_sfe10, 182
- bspline.finc
 - fgsl_bspline_alloc, 300
 - fgsl_bspline_deriv_eval, 300
 - fgsl_bspline_deriv_eval_nonzero, 300
 - fgsl_bspline_eval, 300
 - fgsl_bspline_eval_nonzero, 300
 - fgsl_bspline_free, 300
 - fgsl_bspline_greville_abscissa, 301
 - fgsl_bspline_knots, 301
 - fgsl_bspline_knots_greville, 301
 - fgsl_bspline_knots_uniform, 301
 - fgsl_bspline_ncoeffs, 301
 - gsl_bspline_alloc, 302
 - gsl_bspline_deriv_eval, 302
 - gsl_bspline_deriv_eval_nonzero, 302
 - gsl_bspline_eval, 303
 - gsl_bspline_eval_nonzero, 303
 - gsl_bspline_free, 303
 - gsl_bspline_greville_abscissa, 303
 - gsl_bspline_knots, 303
 - gsl_bspline_knots_greville, 304
 - gsl_bspline_knots_uniform, 304
 - gsl_bspline_ncoeffs, 304
- cblascolmajor
 - fgsl, 110
- cblasconjtrans
 - fgsl, 110
- cblasleft
 - fgsl, 110
- cblaslower
 - fgsl, 110
- cblasnonunit
 - fgsl, 110
- cblasnotrans
 - fgsl, 110
- cblasright
 - fgsl, 110
- cblasrowmajor
 - fgsl, 110
- cblastrans
 - fgsl, 111
- cblasunit
 - fgsl, 111
- cblasupper
 - fgsl, 111
- chebyshev.finc
 - fgsl_cheb_alloc, 305
 - fgsl_cheb_calc_deriv, 305
 - fgsl_cheb_calc_integ, 305
 - fgsl_cheb_coeffs, 305
 - fgsl_cheb_eval, 305
 - fgsl_cheb_eval_err, 305
 - fgsl_cheb_eval_n, 305
 - fgsl_cheb_eval_n_err, 306
 - fgsl_cheb_free, 306
 - fgsl_cheb_init, 306
 - fgsl_cheb_order, 306
 - fgsl_cheb_series_status, 306
 - fgsl_cheb_size, 306
 - gsl_cheb_alloc, 307
 - gsl_cheb_calc_deriv, 307
 - gsl_cheb_calc_integ, 308
 - gsl_cheb_coeffs, 308
 - gsl_cheb_eval, 308
 - gsl_cheb_eval_err, 308
 - gsl_cheb_eval_n, 308
 - gsl_cheb_eval_n_err, 308
 - gsl_cheb_free, 309
 - gsl_cheb_init, 309
 - gsl_cheb_order, 309
 - gsl_cheb_size, 309
- complex.finc
 - complex_to_fgsl_complex, 310
 - fgsl_complex_arccos, 311
 - fgsl_complex_arccos_real, 311

- fgsl_complex_arccosh, 311
- fgsl_complex_arccosh_real, 311
- fgsl_complex_arccot, 311
- fgsl_complex_arccoth, 311
- fgsl_complex_arccsc, 311
- fgsl_complex_arccsc_real, 312
- fgsl_complex_arccsch, 312
- fgsl_complex_arcsec, 312
- fgsl_complex_arcsec_real, 312
- fgsl_complex_arcsech, 312
- fgsl_complex_arcsin, 312
- fgsl_complex_arcsin_real, 312
- fgsl_complex_arcsinh, 313
- fgsl_complex_arctan, 313
- fgsl_complex_arctanh, 313
- fgsl_complex_arctanh_real, 313
- fgsl_complex_arg, 313
- fgsl_complex_log10, 313
- fgsl_complex_log_b, 313
- fgsl_complex_logabs, 314
- fgsl_complex_to_complex, 314
- gsl_complex_arccos, 315
- gsl_complex_arccos_real, 315
- gsl_complex_arccosh, 315
- gsl_complex_arccosh_real, 315
- gsl_complex_arccot, 315
- gsl_complex_arccoth, 316
- gsl_complex_arccsc, 316
- gsl_complex_arccsc_real, 316
- gsl_complex_arccsch, 316
- gsl_complex_arcsec, 316
- gsl_complex_arcsec_real, 316
- gsl_complex_arcsech, 316
- gsl_complex_arcsin, 317
- gsl_complex_arcsin_real, 317
- gsl_complex_arcsinh, 317
- gsl_complex_arctan, 317
- gsl_complex_arctanh, 317
- gsl_complex_arctanh_real, 317
- gsl_complex_arg, 317
- gsl_complex_log10, 318
- gsl_complex_log_b, 318
- gsl_complex_logabs, 318
- complex_to_fgsl_complex
 - assignment(=), 181
 - complex.finc, 310
- dat
 - fgsl::gsl_complex, 274
- deriv.finc
 - fgsl_deriv_backward, 318
 - fgsl_deriv_central, 318
 - fgsl_deriv_forward, 319
 - gsl_deriv_backward, 319
 - gsl_deriv_central, 320
 - gsl_deriv_forward, 320
- dht.finc
 - fgsl_dht_alloc, 320
 - fgsl_dht_apply, 321
 - fgsl_dht_free, 321
 - fgsl_dht_init, 321
 - fgsl_dht_k_sample, 321
 - fgsl_dht_new, 321
 - fgsl_dht_status, 321
 - fgsl_dht_x_sample, 322
 - gsl_dht_alloc, 322
 - gsl_dht_apply, 323
 - gsl_dht_free, 323
 - gsl_dht_init, 323
 - gsl_dht_k_sample, 323
 - gsl_dht_new, 323
 - gsl_dht_x_sample, 323
- dof
 - fgsl::fgsl_multifit_robust_stats, 219
- e10
 - fgsl::fgsl_sf_result_e10, 248
 - fgsl::gsl_sf_result_e10, 275
- eigen.finc
 - fgsl_eigen_gen, 325
 - fgsl_eigen_gen_alloc, 325
 - fgsl_eigen_gen_free, 325
 - fgsl_eigen_gen_params, 325
 - fgsl_eigen_gen_qz, 325
 - fgsl_eigen_genherm, 326
 - fgsl_eigen_genherm_alloc, 326
 - fgsl_eigen_genherm_free, 326
 - fgsl_eigen_genhermv, 326
 - fgsl_eigen_genhermv_alloc, 326
 - fgsl_eigen_genhermv_free, 327
 - fgsl_eigen_genhermv_sort, 327
 - fgsl_eigen_gensymm, 327
 - fgsl_eigen_gensymm_alloc, 327
 - fgsl_eigen_gensymm_free, 327
 - fgsl_eigen_gensymmv, 327
 - fgsl_eigen_gensymmv_alloc, 328
 - fgsl_eigen_gensymmv_free, 328
 - fgsl_eigen_gensymmv_sort, 328
 - fgsl_eigen_genv, 328
 - fgsl_eigen_genv_alloc, 328
 - fgsl_eigen_genv_free, 328
 - fgsl_eigen_genv_qz, 329
 - fgsl_eigen_genv_sort, 329
 - fgsl_eigen_herm, 329
 - fgsl_eigen_herm_alloc, 329
 - fgsl_eigen_herm_free, 329
 - fgsl_eigen_hermv, 330
 - fgsl_eigen_hermv_alloc, 330
 - fgsl_eigen_hermv_free, 330
 - fgsl_eigen_hermv_sort, 330
 - fgsl_eigen_nonsymm, 330
 - fgsl_eigen_nonsymm_alloc, 330
 - fgsl_eigen_nonsymm_free, 331
 - fgsl_eigen_nonsymm_params, 331
 - fgsl_eigen_nonsymm_z, 331
 - fgsl_eigen_nonsymmv, 331
 - fgsl_eigen_nonsymmv_alloc, 331
 - fgsl_eigen_nonsymmv_free, 331

- fgsl_eigen_nonsymmv_params, 332
- fgsl_eigen_nonsymmv_sort, 332
- fgsl_eigen_nonsymmv_z, 332
- fgsl_eigen_symm, 332
- fgsl_eigen_symm_alloc, 332
- fgsl_eigen_symm_free, 332
- fgsl_eigen_symmv, 333
- fgsl_eigen_symmv_alloc, 333
- fgsl_eigen_symmv_free, 333
- fgsl_eigen_symmv_sort, 333
- gsl_eigen_gen, 334
- gsl_eigen_gen_alloc, 335
- gsl_eigen_gen_free, 335
- gsl_eigen_gen_params, 335
- gsl_eigen_gen_qz, 335
- gsl_eigen_genherm, 335
- gsl_eigen_genherm_alloc, 336
- gsl_eigen_genherm_free, 336
- gsl_eigen_genhermv, 336
- gsl_eigen_genhermv_alloc, 336
- gsl_eigen_genhermv_free, 336
- gsl_eigen_genhermv_sort, 336
- gsl_eigen_gensymm, 337
- gsl_eigen_gensymm_alloc, 337
- gsl_eigen_gensymm_free, 337
- gsl_eigen_gensymmv, 337
- gsl_eigen_gensymmv_alloc, 337
- gsl_eigen_gensymmv_free, 337
- gsl_eigen_gensymmv_sort, 338
- gsl_eigen_genv, 338
- gsl_eigen_genv_alloc, 338
- gsl_eigen_genv_free, 338
- gsl_eigen_genv_qz, 338
- gsl_eigen_genv_sort, 338
- gsl_eigen_herm, 339
- gsl_eigen_herm_alloc, 339
- gsl_eigen_herm_free, 339
- gsl_eigen_hermv, 339
- gsl_eigen_hermv_alloc, 339
- gsl_eigen_hermv_free, 339
- gsl_eigen_hermv_sort, 340
- gsl_eigen_nonsymm, 340
- gsl_eigen_nonsymm_alloc, 340
- gsl_eigen_nonsymm_free, 340
- gsl_eigen_nonsymm_params, 340
- gsl_eigen_nonsymm_z, 340
- gsl_eigen_nonsymmv, 341
- gsl_eigen_nonsymmv_alloc, 341
- gsl_eigen_nonsymmv_free, 341
- gsl_eigen_nonsymmv_params, 341
- gsl_eigen_nonsymmv_sort, 341
- gsl_eigen_nonsymmv_z, 341
- gsl_eigen_symm, 342
- gsl_eigen_symm_alloc, 342
- gsl_eigen_symm_free, 342
- gsl_eigen_symmv, 342
- gsl_eigen_symmv_alloc, 342
- gsl_eigen_symmv_free, 342
- gsl_eigen_symmv_sort, 343
- err
 - fgsl::fgsl_sf_result, 247
 - fgsl::fgsl_sf_result_e10, 248
 - fgsl::gsl_sf_result, 275
 - fgsl::gsl_sf_result_e10, 275
- error.finc
 - fgsl_error, 343
 - fgsl_error_handler_init, 344
 - fgsl_error_handler_status, 344
 - fgsl_set_error_handler, 344
 - fgsl_set_error_handler_off, 344
 - fgsl_strerror, 344
 - gsl_error, 345
 - gsl_set_error_handler, 345
 - gsl_set_error_handler_off, 345
 - gsl_strerror, 346
- fclose
 - io.finc, 457
- fflush
 - io.finc, 458
- fft.finc
 - fgsl_fft_complex_backward, 346
 - fgsl_fft_complex_forward, 347
 - fgsl_fft_complex_inverse, 347
 - fgsl_fft_complex_radix2_backward, 347
 - fgsl_fft_complex_radix2_dif_backward, 347
 - fgsl_fft_complex_radix2_dif_forward, 347
 - fgsl_fft_complex_radix2_dif_inverse, 348
 - fgsl_fft_complex_radix2_dif_transform, 348
 - fgsl_fft_complex_radix2_forward, 348
 - fgsl_fft_complex_radix2_inverse, 348
 - fgsl_fft_complex_radix2_transform, 348
 - fgsl_fft_complex_transform, 349
 - fgsl_fft_complex_wavetable_alloc, 349
 - fgsl_fft_complex_wavetable_free, 349
 - fgsl_fft_complex_workspace_alloc, 349
 - fgsl_fft_complex_workspace_free, 349
 - fgsl_fft_halfcomplex_radix2_backward, 349
 - fgsl_fft_halfcomplex_radix2_inverse, 350
 - fgsl_fft_halfcomplex_transform, 350
 - fgsl_fft_halfcomplex_unpack, 350
 - fgsl_fft_halfcomplex_wavetable_alloc, 350
 - fgsl_fft_halfcomplex_wavetable_free, 350
 - fgsl_fft_real_radix2_transform, 350
 - fgsl_fft_real_transform, 351
 - fgsl_fft_real_unpack, 351
 - fgsl_fft_real_wavetable_alloc, 351
 - fgsl_fft_real_wavetable_free, 351
 - fgsl_fft_real_workspace_alloc, 351
 - fgsl_fft_real_workspace_free, 351
 - gsl_fft_complex_backward, 353
 - gsl_fft_complex_forward, 353
 - gsl_fft_complex_inverse, 353
 - gsl_fft_complex_radix2_backward, 353
 - gsl_fft_complex_radix2_dif_backward, 353
 - gsl_fft_complex_radix2_dif_forward, 354
 - gsl_fft_complex_radix2_dif_inverse, 354

- gsl_fft_complex_radix2_dif_transform, 354
- gsl_fft_complex_radix2_forward, 354
- gsl_fft_complex_radix2_inverse, 354
- gsl_fft_complex_radix2_transform, 355
- gsl_fft_complex_transform, 355
- gsl_fft_complex_wavetable_alloc, 355
- gsl_fft_complex_wavetable_free, 355
- gsl_fft_complex_workspace_alloc, 355
- gsl_fft_complex_workspace_free, 355
- gsl_fft_halfcomplex_radix2_backward, 356
- gsl_fft_halfcomplex_radix2_inverse, 356
- gsl_fft_halfcomplex_transform, 356
- gsl_fft_halfcomplex_unpack, 356
- gsl_fft_halfcomplex_wavetable_alloc, 356
- gsl_fft_halfcomplex_wavetable_free, 356
- gsl_fft_real_radix2_transform, 357
- gsl_fft_real_transform, 357
- gsl_fft_real_unpack, 357
- gsl_fft_real_wavetable_alloc, 357
- gsl_fft_real_wavetable_free, 357
- gsl_fft_real_workspace_alloc, 357
- gsl_fft_real_workspace_free, 358
- fgsl, 97
 - cblascolmajor, 110
 - cblasconjtrans, 110
 - cblasleft, 110
 - cblaslower, 110
 - cblasnonunit, 110
 - cblasnotrans, 110
 - cblasright, 110
 - cblasrowmajor, 110
 - cblastrans, 111
 - cblasunit, 111
 - cblasupper, 111
 - fgsl_char, 111
 - fgsl_const_cgsm_acre, 111
 - fgsl_const_cgsm_angstrom, 111
 - fgsl_const_cgsm_astronomical_unit, 111
 - fgsl_const_cgsm_bar, 111
 - fgsl_const_cgsm_barn, 112
 - fgsl_const_cgsm_bohr_magneton, 112
 - fgsl_const_cgsm_bohr_radius, 112
 - fgsl_const_cgsm_boltzmann, 112
 - fgsl_const_cgsm_btu, 112
 - fgsl_const_cgsm_calorie, 112
 - fgsl_const_cgsm_canadian_gallon, 112
 - fgsl_const_cgsm_carat, 113
 - fgsl_const_cgsm_cup, 113
 - fgsl_const_cgsm_curie, 113
 - fgsl_const_cgsm_day, 113
 - fgsl_const_cgsm_dyne, 113
 - fgsl_const_cgsm_electron_charge, 113
 - fgsl_const_cgsm_electron_magnetic_moment, 113
 - fgsl_const_cgsm_electron_volt, 114
 - fgsl_const_cgsm_erg, 114
 - fgsl_const_cgsm_faraday, 114
 - fgsl_const_cgsm_fathom, 114
 - fgsl_const_cgsm_fluid_ounce, 114
 - fgsl_const_cgsm_foot, 114
 - fgsl_const_cgsm_footcandle, 114
 - fgsl_const_cgsm_footlambert, 115
 - fgsl_const_cgsm_gauss, 115
 - fgsl_const_cgsm_gram_force, 115
 - fgsl_const_cgsm_grav_accel, 115
 - fgsl_const_cgsm_gravitational_constant, 115
 - fgsl_const_cgsm_hectare, 115
 - fgsl_const_cgsm_horsepower, 115
 - fgsl_const_cgsm_hour, 116
 - fgsl_const_cgsm_inch, 116
 - fgsl_const_cgsm_inch_of_mercury, 116
 - fgsl_const_cgsm_inch_of_water, 116
 - fgsl_const_cgsm_joule, 116
 - fgsl_const_cgsm_kilometers_per_hour, 116
 - fgsl_const_cgsm_kilopound_force, 116
 - fgsl_const_cgsm_knot, 117
 - fgsl_const_cgsm_lambert, 117
 - fgsl_const_cgsm_light_year, 117
 - fgsl_const_cgsm_liter, 117
 - fgsl_const_cgsm_lumen, 117
 - fgsl_const_cgsm_lux, 117
 - fgsl_const_cgsm_mass_electron, 117
 - fgsl_const_cgsm_mass_muon, 118
 - fgsl_const_cgsm_mass_neutron, 118
 - fgsl_const_cgsm_mass_proton, 118
 - fgsl_const_cgsm_meter_of_mercury, 118
 - fgsl_const_cgsm_metric_ton, 118
 - fgsl_const_cgsm_micron, 118
 - fgsl_const_cgsm_mil, 118
 - fgsl_const_cgsm_mile, 119
 - fgsl_const_cgsm_miles_per_hour, 119
 - fgsl_const_cgsm_minute, 119
 - fgsl_const_cgsm_molar_gas, 119
 - fgsl_const_cgsm_nautical_mile, 119
 - fgsl_const_cgsm_newton, 119
 - fgsl_const_cgsm_nuclear_magneton, 119
 - fgsl_const_cgsm_ounce_mass, 120
 - fgsl_const_cgsm_parsec, 120
 - fgsl_const_cgsm_phot, 120
 - fgsl_const_cgsm_pint, 120
 - fgsl_const_cgsm_plancks_constant_h, 120
 - fgsl_const_cgsm_plancks_constant_hbar, 120
 - fgsl_const_cgsm_point, 120
 - fgsl_const_cgsm_poise, 121
 - fgsl_const_cgsm_pound_force, 121
 - fgsl_const_cgsm_pound_mass, 121
 - fgsl_const_cgsm_poundal, 121
 - fgsl_const_cgsm_proton_magnetic_moment, 121
 - fgsl_const_cgsm_psi, 121
 - fgsl_const_cgsm_quart, 121
 - fgsl_const_cgsm_rad, 122
 - fgsl_const_cgsm_roentgen, 122
 - fgsl_const_cgsm_rydberg, 122
 - fgsl_const_cgsm_solar_mass, 122
 - fgsl_const_cgsm_speed_of_light, 122
 - fgsl_const_cgsm_standard_gas_volume, 122
 - fgsl_const_cgsm_std_atmosphere, 122

- fgsl_const_cgsm_stefan_boltzmann_constant, 123
- fgsl_const_cgsm_stilb, 123
- fgsl_const_cgsm_stokes, 123
- fgsl_const_cgsm_tablespoon, 123
- fgsl_const_cgsm_tespoon, 123
- fgsl_const_cgsm_texpoint, 123
- fgsl_const_cgsm_therm, 123
- fgsl_const_cgsm_thomson_cross_section, 124
- fgsl_const_cgsm_ton, 124
- fgsl_const_cgsm_torr, 124
- fgsl_const_cgsm_troy_ounce, 124
- fgsl_const_cgsm_uk_gallon, 124
- fgsl_const_cgsm_uk_ton, 124
- fgsl_const_cgsm_unified_atomic_mass, 124
- fgsl_const_cgsm_us_gallon, 125
- fgsl_const_cgsm_week, 125
- fgsl_const_cgsm_yard, 125
- fgsl_const_mkasa_acre, 125
- fgsl_const_mkasa_angstrom, 125
- fgsl_const_mkasa_astronomical_unit, 125
- fgsl_const_mkasa_bar, 125
- fgsl_const_mkasa_barn, 126
- fgsl_const_mkasa_bohr_magneton, 126
- fgsl_const_mkasa_bohr_radius, 126
- fgsl_const_mkasa_boltzmann, 126
- fgsl_const_mkasa_btu, 126
- fgsl_const_mkasa_calorie, 126
- fgsl_const_mkasa_canadian_gallon, 126
- fgsl_const_mkasa_carat, 127
- fgsl_const_mkasa_cup, 127
- fgsl_const_mkasa_curie, 127
- fgsl_const_mkasa_day, 127
- fgsl_const_mkasa_debye, 127
- fgsl_const_mkasa_dyne, 127
- fgsl_const_mkasa_electron_charge, 127
- fgsl_const_mkasa_electron_magnetic_moment, 128
- fgsl_const_mkasa_electron_volt, 128
- fgsl_const_mkasa_erg, 128
- fgsl_const_mkasa_faraday, 128
- fgsl_const_mkasa_fathom, 128
- fgsl_const_mkasa_fluid_ounce, 128
- fgsl_const_mkasa_foot, 128
- fgsl_const_mkasa_footcandle, 129
- fgsl_const_mkasa_footlambert, 129
- fgsl_const_mkasa_gauss, 129
- fgsl_const_mkasa_gram_force, 129
- fgsl_const_mkasa_grav_accel, 129
- fgsl_const_mkasa_gravitational_constant, 129
- fgsl_const_mkasa_hectare, 129
- fgsl_const_mkasa_horsepower, 130
- fgsl_const_mkasa_hour, 130
- fgsl_const_mkasa_inch, 130
- fgsl_const_mkasa_inch_of_mercury, 130
- fgsl_const_mkasa_inch_of_water, 130
- fgsl_const_mkasa_joule, 130
- fgsl_const_mkasa_kilometers_per_hour, 130
- fgsl_const_mkasa_kilopound_force, 131
- fgsl_const_mkasa_knot, 131
- fgsl_const_mkasa_lambert, 131
- fgsl_const_mkasa_light_year, 131
- fgsl_const_mkasa_liter, 131
- fgsl_const_mkasa_lumen, 131
- fgsl_const_mkasa_lux, 131
- fgsl_const_mkasa_mass_electron, 132
- fgsl_const_mkasa_mass_muon, 132
- fgsl_const_mkasa_mass_neutron, 132
- fgsl_const_mkasa_mass_proton, 132
- fgsl_const_mkasa_meter_of_mercury, 132
- fgsl_const_mkasa_metric_ton, 132
- fgsl_const_mkasa_micron, 132
- fgsl_const_mkasa_mil, 133
- fgsl_const_mkasa_mile, 133
- fgsl_const_mkasa_miles_per_hour, 133
- fgsl_const_mkasa_minute, 133
- fgsl_const_mkasa_molar_gas, 133
- fgsl_const_mkasa_nautical_mile, 133
- fgsl_const_mkasa_newton, 133
- fgsl_const_mkasa_nuclear_magneton, 134
- fgsl_const_mkasa_ounce_mass, 134
- fgsl_const_mkasa_parsec, 134
- fgsl_const_mkasa_phot, 134
- fgsl_const_mkasa_pint, 134
- fgsl_const_mkasa_plancks_constant_h, 134
- fgsl_const_mkasa_plancks_constant_hbar, 134
- fgsl_const_mkasa_point, 135
- fgsl_const_mkasa_poise, 135
- fgsl_const_mkasa_pound_force, 135
- fgsl_const_mkasa_pound_mass, 135
- fgsl_const_mkasa_poundal, 135
- fgsl_const_mkasa_proton_magnetic_moment, 135
- fgsl_const_mkasa_psi, 135
- fgsl_const_mkasa_quart, 136
- fgsl_const_mkasa_rad, 136
- fgsl_const_mkasa_roentgen, 136
- fgsl_const_mkasa_rydberg, 136
- fgsl_const_mkasa_solar_mass, 136
- fgsl_const_mkasa_speed_of_light, 136
- fgsl_const_mkasa_standard_gas_volume, 136
- fgsl_const_mkasa_std_atmosphere, 137
- fgsl_const_mkasa_stefan_boltzmann_constant, 137
- fgsl_const_mkasa_stilb, 137
- fgsl_const_mkasa_stokes, 137
- fgsl_const_mkasa_tablespoon, 137
- fgsl_const_mkasa_tespoon, 137
- fgsl_const_mkasa_texpoint, 137
- fgsl_const_mkasa_therm, 138
- fgsl_const_mkasa_thomson_cross_section, 138
- fgsl_const_mkasa_ton, 138
- fgsl_const_mkasa_torr, 138
- fgsl_const_mkasa_troy_ounce, 138
- fgsl_const_mkasa_uk_gallon, 138
- fgsl_const_mkasa_uk_ton, 138
- fgsl_const_mkasa_unified_atomic_mass, 139
- fgsl_const_mkasa_us_gallon, 139
- fgsl_const_mkasa_vacuum_permeability, 139
- fgsl_const_mkasa_vacuum_permittivity, 139

fgsl_const_mkxa_week, 139
fgsl_const_mkxa_yard, 139
fgsl_const_num_atto, 139
fgsl_const_num_avogadro, 140
fgsl_const_num_exa, 140
fgsl_const_num_femto, 140
fgsl_const_num_fine_structure, 140
fgsl_const_num_giga, 140
fgsl_const_num_kilo, 140
fgsl_const_num_mega, 140
fgsl_const_num_micro, 141
fgsl_const_num_milli, 141
fgsl_const_num_nano, 141
fgsl_const_num_peta, 141
fgsl_const_num_pico, 141
fgsl_const_num_tera, 141
fgsl_const_num_yocto, 141
fgsl_const_num_yotta, 141
fgsl_const_num_zepto, 142
fgsl_const_num_zetta, 142
fgsl_continue, 142
fgsl_double, 142
fgsl_double_complex, 142
fgsl_ebadfunc, 142
fgsl_ebadlen, 142
fgsl_ebadtol, 142
fgsl_ecache, 143
fgsl_ediverge, 143
fgsl_edom, 143
fgsl_efactor, 143
fgsl_efault, 143
fgsl_eigen_sort_abs_asc, 143
fgsl_eigen_sort_abs_desc, 143
fgsl_eigen_sort_val_asc, 143
fgsl_eigen_sort_val_desc, 144
fgsl_einval, 144
fgsl_eloss, 144
fgsl_emaxiter, 144
fgsl_enomem, 144
fgsl_enoprog, 144
fgsl_enoprogj, 144
fgsl_enotsqr, 144
fgsl_eof, 145
fgsl_eovrflw, 145
fgsl_erange, 145
fgsl_eround, 145
fgsl_erunaway, 145
fgsl_esanity, 145
fgsl_esing, 145
fgsl_etable, 145
fgsl_etol, 146
fgsl_etolf, 146
fgsl_etolg, 146
fgsl_etolx, 146
fgsl_eundrflw, 146
fgsl_eunimpl, 146
fgsl_eunsup, 146
fgsl_extended, 146
fgsl_ezerodiv, 147
fgsl_failure, 147
fgsl_filter_end_padvalue, 147
fgsl_filter_end_padzero, 147
fgsl_filter_end_truncate, 147
fgsl_filter_scale_iqr, 147
fgsl_filter_scale_mad, 147
fgsl_filter_scale_qn, 148
fgsl_filter_scale_sn, 148
fgsl_float, 148
fgsl_gslbase, 148
fgsl_int, 148
fgsl_integ_cosine, 148
fgsl_integ_gauss15, 148
fgsl_integ_gauss21, 148
fgsl_integ_gauss31, 149
fgsl_integ_gauss41, 149
fgsl_integ_gauss51, 149
fgsl_integ_gauss61, 149
fgsl_integ_sine, 149
fgsl_integration_fixed_chebyshev, 149
fgsl_integration_fixed_chebyshev2, 149
fgsl_integration_fixed_exponential, 149
fgsl_integration_fixed_gegenbauer, 150
fgsl_integration_fixed_hermite, 150
fgsl_integration_fixed_jacobi, 150
fgsl_integration_fixed_laguerre, 150
fgsl_integration_fixed_legendre, 150
fgsl_integration_fixed_rational, 150
fgsl_interp2d_bicubic, 150
fgsl_interp2d_bilinear, 150
fgsl_interp_akima, 151
fgsl_interp_akima_periodic, 151
fgsl_interp_cspline, 151
fgsl_interp_cspline_periodic, 151
fgsl_interp_linear, 151
fgsl_interp_polynomial, 151
fgsl_interp_steffen, 151
fgsl_long, 151
fgsl_min_fminimizer_brent, 152
fgsl_min_fminimizer_goldensection, 152
fgsl_min_fminimizer_quad_golden, 152
fgsl_movstat_end_padvalue, 152
fgsl_movstat_end_padzero, 152
fgsl_movstat_end_truncate, 152
fgsl_multifit_fdfsolver_lmder, 152
fgsl_multifit_fdfsolver_lmniel, 153
fgsl_multifit_fdfsolver_lmsder, 153
fgsl_multifit_nlinear_ctrdiff, 153
fgsl_multifit_nlinear_fwdiff, 153
fgsl_multifit_nlinear_scale levenberg, 153
fgsl_multifit_nlinear_scale_marquardt, 153
fgsl_multifit_nlinear_scale_more, 153
fgsl_multifit_nlinear_solver_cholesky, 154
fgsl_multifit_nlinear_solver_qr, 154
fgsl_multifit_nlinear_solver_svd, 154
fgsl_multifit_nlinear_trs_ddogleg, 154
fgsl_multifit_nlinear_trs_dogleg, 154

fgsl_multifit_nlinear_trs_lm, 154
fgsl_multifit_nlinear_trs_lmaccel, 154
fgsl_multifit_nlinear_trs_subspace2d, 155
fgsl_multifit_robust_bisquare, 155
fgsl_multifit_robust_cauchy, 155
fgsl_multifit_robust_default, 155
fgsl_multifit_robust_fair, 155
fgsl_multifit_robust_huber, 155
fgsl_multifit_robust_ols, 155
fgsl_multifit_robust_welsch, 156
fgsl_multilarge_linear_normal, 156
fgsl_multilarge_linear_tsqr, 156
fgsl_multilarge_nlinear_scale_levenberg, 156
fgsl_multilarge_nlinear_scale_marquardt, 156
fgsl_multilarge_nlinear_scale_more, 156
fgsl_multilarge_nlinear_solver_cholesky, 156
fgsl_multilarge_nlinear_trs_cgst, 157
fgsl_multilarge_nlinear_trs_ddogleg, 157
fgsl_multilarge_nlinear_trs_dogleg, 157
fgsl_multilarge_nlinear_trs_lm, 157
fgsl_multilarge_nlinear_trs_lmaccel, 157
fgsl_multilarge_nlinear_trs_subspace2d, 157
fgsl_multimin_fdfminimizer_conjugate_fr, 157
fgsl_multimin_fdfminimizer_conjugate_pr, 158
fgsl_multimin_fdfminimizer_steepest_descent, 158
fgsl_multimin_fdfminimizer_vector_bfgs, 158
fgsl_multimin_fdfminimizer_vector_bfgs2, 158
fgsl_multimin_fminimizer_nmsimplex, 158
fgsl_multimin_fminimizer_nmsimplex2, 158
fgsl_multimin_fminimizer_nmsimplex2rand, 158
fgsl_multiroot_fdfsolver_gnewton, 159
fgsl_multiroot_fdfsolver_hybridj, 159
fgsl_multiroot_fdfsolver_hybridjsj, 159
fgsl_multiroot_fdfsolver_newton, 159
fgsl_multiroot_fsolver_broyden, 159
fgsl_multiroot_fsolver_dnewton, 159
fgsl_multiroot_fsolver_hybrid, 159
fgsl_multiroot_fsolver_hybrids, 160
fgsl_odeiv2_step_bsimp, 160
fgsl_odeiv2_step_msadams, 160
fgsl_odeiv2_step_msbdf, 160
fgsl_odeiv2_step_rk1imp, 160
fgsl_odeiv2_step_rk2, 160
fgsl_odeiv2_step_rk2imp, 160
fgsl_odeiv2_step_rk4, 161
fgsl_odeiv2_step_rk4imp, 161
fgsl_odeiv2_step_rk8pd, 161
fgsl_odeiv2_step_rkck, 161
fgsl_odeiv2_step_rkf45, 161
fgsl_odeiv_hadj_dec, 161
fgsl_odeiv_hadj_inc, 161
fgsl_odeiv_hadj_nil, 161
fgsl_odeiv_step_bsimp, 162
fgsl_odeiv_step_gear1, 162
fgsl_odeiv_step_gear2, 162
fgsl_odeiv_step_rk2, 162
fgsl_odeiv_step_rk2imp, 162
fgsl_odeiv_step_rk2simp, 162
fgsl_odeiv_step_rk4, 162
fgsl_odeiv_step_rk4imp, 162
fgsl_odeiv_step_rk8pd, 163
fgsl_odeiv_step_rkck, 163
fgsl_odeiv_step_rkf45, 163
fgsl_pathmax, 163
fgsl_prec_approx, 163
fgsl_prec_double, 163
fgsl_prec_single, 163
fgsl_qrng_halton, 163
fgsl_qrng_niederreiter_2, 164
fgsl_qrng_reversehalton, 164
fgsl_qrng_sobol, 164
fgsl_rng_borosh13, 164
fgsl_rng_cmrq, 164
fgsl_rng_coveyou, 164
fgsl_rng_default, 164
fgsl_rng_default_seed, 164
fgsl_rng_fishman18, 165
fgsl_rng_fishman20, 165
fgsl_rng_fishman2x, 165
fgsl_rng_gfsr4, 165
fgsl_rng_knuthran, 165
fgsl_rng_knuthran2, 165
fgsl_rng_knuthran2002, 165
fgsl_rng_lecuyer21, 165
fgsl_rng_minstd, 166
fgsl_rng_mrg, 166
fgsl_rng_mt19937, 166
fgsl_rng_mt19937_1998, 166
fgsl_rng_mt19937_1999, 166
fgsl_rng_r250, 166
fgsl_rng_ran0, 166
fgsl_rng_ran1, 166
fgsl_rng_ran2, 167
fgsl_rng_ran3, 167
fgsl_rng_rand, 167
fgsl_rng_rand48, 167
fgsl_rng_random128_bsd, 167
fgsl_rng_random128_glibc2, 167
fgsl_rng_random128_libc5, 167
fgsl_rng_random256_bsd, 167
fgsl_rng_random256_glibc2, 168
fgsl_rng_random256_libc5, 168
fgsl_rng_random32_bsd, 168
fgsl_rng_random32_glibc2, 168
fgsl_rng_random32_libc5, 168
fgsl_rng_random64_bsd, 168
fgsl_rng_random64_glibc2, 168
fgsl_rng_random64_libc5, 168
fgsl_rng_random8_bsd, 169
fgsl_rng_random8_glibc2, 169
fgsl_rng_random8_libc5, 169
fgsl_rng_random_bsd, 169
fgsl_rng_random_glibc2, 169
fgsl_rng_random_libc5, 169
fgsl_rng_randu, 169
fgsl_rng_ranf, 169

- fgsl_rng_ranlux, 170
- fgsl_rng_ranlux389, 170
- fgsl_rng_ranlxd1, 170
- fgsl_rng_ranlxd2, 170
- fgsl_rng_ranlxs0, 170
- fgsl_rng_ranlxs1, 170
- fgsl_rng_ranlxs2, 170
- fgsl_rng_ranmar, 170
- fgsl_rng_slatec, 171
- fgsl_rng_taus, 171
- fgsl_rng_taus113, 171
- fgsl_rng_taus2, 171
- fgsl_rng_transputer, 171
- fgsl_rng_tt800, 171
- fgsl_rng_uni, 171
- fgsl_rng_uni32, 171
- fgsl_rng_vax, 172
- fgsl_rng_waterman14, 172
- fgsl_rng_zuf, 172
- fgsl_root_fdfsolver_newton, 172
- fgsl_root_fdfsolver_secant, 172
- fgsl_root_fdfsolver_steffenson, 172
- fgsl_root_fsolver_bisection, 172
- fgsl_root_fsolver_brent, 172
- fgsl_root_fsolver_falsepos, 173
- fgsl_sf_legendre_full, 173
- fgsl_sf_legendre_none, 173
- fgsl_sf_legendre_schmidt, 173
- fgsl_sf_legendre_spharm, 173
- fgsl_size_t, 173
- fgsl_splinalg_itersolve_gmres, 173
- fgsl_spmatrix_ccs, 173
- fgsl_spmatrix_crs, 174
- fgsl_spmatrix_triplet, 174
- fgsl_spmatrix_type_coo, 174
- fgsl_spmatrix_type_csc, 174
- fgsl_spmatrix_type_csr, 174
- fgsl_strmax, 174
- fgsl_success, 174
- fgsl_vegas_mode_importance, 174
- fgsl_vegas_mode_importance_only, 175
- fgsl_vegas_mode_stratified, 175
- fgsl_version, 175
- fgsl_wavelet_bspline, 175
- fgsl_wavelet_bspline_centered, 175
- fgsl_wavelet_daubechies, 175
- fgsl_wavelet_daubechies_centered, 175
- fgsl_wavelet_haar, 175
- fgsl_wavelet_haar_centered, 176
- gsl_sf_legendre_full, 176
- gsl_sf_legendre_none, 176
- gsl_sf_legendre_schmidt, 176
- gsl_sf_legendre_spharm, 176
- m_1_pi, 176
- m_2_pi, 176
- m_2_sqrtpi, 177
- m_e, 177
- m_euler, 177
- m_ln10, 177
- m_ln2, 177
- m_lnp_i, 177
- m_log10e, 177
- m_log2e, 178
- m_pi, 178
- m_pi_2, 178
- m_pi_4, 178
- m_sqrt1_2, 178
- m_sqrt2, 178
- m_sqrt3, 178
- m_sqrtpi, 179
- fgsl.F90, 1039
- fgsl::fgsl_bspline_workspace, 182
 - gsl_bspline_workspace, 182
- fgsl::fgsl_cheb_series, 183
 - gsl_cheb_series, 183
- fgsl::fgsl_combination, 183
 - gsl_combination, 183
- fgsl::fgsl_dht, 184
 - gsl_dht, 184
- fgsl::fgsl_eigen_gen_workspace, 184
 - gsl_eigen_gen_workspace, 184
- fgsl::fgsl_eigen_genherm_workspace, 184
 - gsl_eigen_genherm_workspace, 185
- fgsl::fgsl_eigen_genhermv_workspace, 185
 - gsl_eigen_genhermv_workspace, 185
- fgsl::fgsl_eigen_gensymm_workspace, 185
 - gsl_eigen_gensymm_workspace, 185
- fgsl::fgsl_eigen_gensymmv_workspace, 186
 - gsl_eigen_gensymmv_workspace, 186
- fgsl::fgsl_eigen_genv_workspace, 186
 - gsl_eigen_genv_workspace, 186
- fgsl::fgsl_eigen_herm_workspace, 187
 - gsl_eigen_herm_workspace, 187
- fgsl::fgsl_eigen_hermv_workspace, 187
 - gsl_eigen_hermv_workspace, 187
- fgsl::fgsl_eigen_nonsymm_workspace, 187
 - gsl_eigen_nonsymm_workspace, 188
- fgsl::fgsl_eigen_nonsymmv_workspace, 188
 - gsl_eigen_nonsymmv_workspace, 188
- fgsl::fgsl_eigen_symm_workspace, 188
 - gsl_eigen_symm_workspace, 188
- fgsl::fgsl_eigen_symmv_workspace, 189
 - gsl_eigen_symmv_workspace, 189
- fgsl::fgsl_error_handler_t, 189
 - gsl_error_handler_t, 189
- fgsl::fgsl_fft_complex_wavetable, 190
 - gsl_fft_complex_wavetable, 190
- fgsl::fgsl_fft_complex_workspace, 190
 - gsl_fft_complex_workspace, 190
- fgsl::fgsl_fft_halfcomplex_wavetable, 190
 - gsl_fft_halfcomplex_wavetable, 191
- fgsl::fgsl_fft_real_wavetable, 191
 - gsl_fft_real_wavetable, 191
- fgsl::fgsl_fft_real_workspace, 191
 - gsl_fft_real_workspace, 191
- fgsl::fgsl_file, 192

- gsl_file, 192
- fgsl::fgsl_filter_gaussian_workspace, 192
 - gsl_filter_gaussian_workspace, 192
- fgsl::fgsl_filter_impulse_workspace, 193
 - gsl_filter_impulse_workspace, 193
- fgsl::fgsl_filter_median_workspace, 193
 - gsl_filter_median_workspace, 193
- fgsl::fgsl_filter_rmedian_workspace, 193
 - gsl_filter_rmedian_workspace, 194
- fgsl::fgsl_function, 194
 - gsl_function, 194
- fgsl::fgsl_function_fdf, 194
 - gsl_function_fdf, 194
- fgsl::fgsl_histogram, 195
 - gsl_histogram, 195
- fgsl::fgsl_histogram2d, 195
 - gsl_histogram2d, 195
- fgsl::fgsl_histogram2d_pdf, 196
 - gsl_histogram2d_pdf, 196
- fgsl::fgsl_histogram_pdf, 196
 - gsl_histogram_pdf, 196
- fgsl::fgsl_integration_cquad_workspace, 198
 - gsl_integration_cquad_workspace, 198
- fgsl::fgsl_integration_fixed_workspace, 198
 - gsl_integration_fixed_workspace, 198
- fgsl::fgsl_integration_glfixed_table, 198
 - gsl_integration_glfixed_table, 199
- fgsl::fgsl_integration_qawo_table, 199
 - gsl_integration_qawo_table, 199
- fgsl::fgsl_integration_qaws_table, 199
 - gsl_integration_qaws_table, 199
- fgsl::fgsl_integration_romberg_workspace, 200
 - gsl_integration_romberg_workspace, 200
- fgsl::fgsl_integration_workspace, 200
 - gsl_integration_workspace, 200
- fgsl::fgsl_interp, 201
 - gsl_interp, 201
- fgsl::fgsl_interp2d, 201
 - gsl_interp2d, 201
- fgsl::fgsl_interp2d_type, 201
 - which, 202
- fgsl::fgsl_interp_accel, 202
 - gsl_interp_accel, 202
- fgsl::fgsl_interp_type, 202
 - which, 202
- fgsl::fgsl_matrix, 203
 - gsl_matrix, 203
- fgsl::fgsl_matrix_complex, 204
 - gsl_matrix_complex, 204
- fgsl::fgsl_min_fminimizer, 207
 - gsl_min_fminimizer, 207
- fgsl::fgsl_min_fminimizer_type, 207
 - which, 207
- fgsl::fgsl_mode_t, 208
 - gsl_mode, 208
- fgsl::fgsl_monte_function, 208
 - gsl_monte_function, 208
- fgsl::fgsl_monte_miser_state, 208
 - gsl_monte_miser_state, 209
- fgsl::fgsl_monte_plain_state, 209
 - gsl_monte_plain_state, 209
- fgsl::fgsl_monte_vegas_state, 209
 - gsl_monte_vegas_state, 209
- fgsl::fgsl_movstat_function, 210
 - function, 210
 - params, 210
- fgsl::fgsl_movstat_workspace, 210
 - gsl_movstat_workspace, 211
- fgsl::fgsl_multifit_fdfridge, 212
 - gsl_multifit_fdfridge, 212
- fgsl::fgsl_multifit_fdfsolver, 212
 - gsl_multifit_fdfsolver, 213
- fgsl::fgsl_multifit_fdfsolver_type, 213
 - which, 214
- fgsl::fgsl_multifit_fsolver, 214
 - gsl_multifit_fsolver, 214
- fgsl::fgsl_multifit_fsolver_type, 214
 - which, 214
- fgsl::fgsl_multifit_function, 215
 - gsl_multifit_function, 215
- fgsl::fgsl_multifit_function_fdf, 215
 - gsl_multifit_function_fdf, 215
- fgsl::fgsl_multifit_linear_workspace, 216
 - gsl_multifit_linear_workspace, 216
- fgsl::fgsl_multifit_nlinear_fdf, 216
 - gsl_multifit_nlinear_fdf, 216
- fgsl::fgsl_multifit_nlinear_parameters, 217
 - gsl_multifit_nlinear_parameters, 217
- fgsl::fgsl_multifit_nlinear_type, 218
 - gsl_multifit_nlinear_type, 218
- fgsl::fgsl_multifit_nlinear_workspace, 218
 - gsl_multifit_nlinear_workspace, 218
- fgsl::fgsl_multifit_robust_stats, 219
 - adj_rsqr, 219
 - dof, 219
 - numit, 219
 - r, 220
 - rmse, 220
 - rsqr, 220
 - sigma, 220
 - sigma_mad, 220
 - sigma_ols, 220
 - sigma_rob, 220
 - sse, 220
 - weights, 221
- fgsl::fgsl_multifit_robust_type, 221
 - which, 221
- fgsl::fgsl_multifit_robust_workspace, 221
 - gsl_multifit_robust_workspace, 221
- fgsl::fgsl_multilarge_linear_type, 222
 - which, 222
- fgsl::fgsl_multilarge_linear_workspace, 222
 - gsl_multilarge_linear_workspace, 222
- fgsl::fgsl_multilarge_nlinear_fdf, 223
 - gsl_multilarge_nlinear_fdf, 223
- fgsl::fgsl_multilarge_nlinear_parameters, 223

- gsl_multilarge_nlinear_parameters, 223
- fgsl::fgsl_multilarge_nlinear_type, 224
- gsl_multilarge_nlinear_type, 224
- fgsl::fgsl_multilarge_nlinear_workspace, 225
- gsl_multilarge_nlinear_workspace, 225
- fgsl::fgsl_multimin_fdfminimizer, 225
- gsl_multimin_fdfminimizer, 225
- fgsl::fgsl_multimin_fdfminimizer_type, 225
- which, 226
- fgsl::fgsl_multimin_fminimizer, 226
- gsl_multimin_fminimizer, 226
- fgsl::fgsl_multimin_fminimizer_type, 226
- which, 226
- fgsl::fgsl_multimin_function, 227
- gsl_multimin_function, 227
- fgsl::fgsl_multimin_function_fdf, 227
- gsl_multimin_function_fdf, 227
- fgsl::fgsl_multiroot_fdfsolver, 228
- gsl_multiroot_fdfsolver, 228
- fgsl::fgsl_multiroot_fdfsolver_type, 228
- which, 228
- fgsl::fgsl_multiroot_fsolver, 228
- gsl_multiroot_fsolver, 229
- fgsl::fgsl_multiroot_fsolver_type, 229
- which, 229
- fgsl::fgsl_multiroot_function, 229
- gsl_multiroot_function, 229
- fgsl::fgsl_multiroot_function_fdf, 230
- gsl_multiroot_function_fdf, 230
- fgsl::fgsl_multiset, 230
- gsl_multiset, 230
- fgsl::fgsl_nlinear_callback, 231
- fgsl::fgsl_ntuple, 231
- gsl_ntuple, 231
- fgsl::fgsl_ntuple_select_fn, 231
- gsl_ntuple_select_fn, 231
- fgsl::fgsl_ntuple_value_fn, 232
- gsl_ntuple_value_fn, 232
- fgsl::fgsl_odeiv2_control, 233
- gsl_odeiv2_control, 233
- fgsl::fgsl_odeiv2_control_type, 233
- gsl_odeiv2_control_type, 233
- fgsl::fgsl_odeiv2_driver, 234
- gsl_odeiv2_driver, 234
- fgsl::fgsl_odeiv2_evolve, 234
- gsl_odeiv2_evolve, 234
- fgsl::fgsl_odeiv2_step, 234
- gsl_odeiv2_step, 235
- fgsl::fgsl_odeiv2_step_type, 235
- which, 235
- fgsl::fgsl_odeiv2_system, 235
- gsl_odeiv2_system, 235
- fgsl::fgsl_odeiv_control, 236
- gsl_odeiv_control, 236
- fgsl::fgsl_odeiv_control_type, 236
- gsl_odeiv_control_type, 236
- fgsl::fgsl_odeiv_evolve, 237
- gsl_odeiv_evolve, 237
- fgsl::fgsl_odeiv_step, 237
- gsl_odeiv_step, 237
- fgsl::fgsl_odeiv_step_type, 237
- which, 238
- fgsl::fgsl_odeiv_system, 238
- gsl_odeiv_system, 238
- fgsl::fgsl_permutation, 238
- gsl_permutation, 238
- fgsl::fgsl_poly_complex_workspace, 240
- gsl_poly_complex_workspace, 240
- fgsl::fgsl_qrng, 240
- gsl_qrng, 241
- fgsl::fgsl_qrng_type, 241
- type, 241
- fgsl::fgsl_ran_discrete_t, 241
- gsl_ran_discrete_t, 241
- fgsl::fgsl_rng, 243
- gsl_rng, 243
- fgsl::fgsl_rng_type, 243
- gsl_rng_type, 243
- type, 243
- fgsl::fgsl_root_fdfsolver, 244
- gsl_root_fdfsolver, 244
- fgsl::fgsl_root_fdfsolver_type, 244
- which, 244
- fgsl::fgsl_root_fsolver, 244
- gsl_root_fsolver, 245
- fgsl::fgsl_root_fsolver_type, 245
- which, 245
- fgsl::fgsl_rstat_quantile_workspace, 245
- gsl_rstat_quantile_workspace, 245
- fgsl::fgsl_rstat_workspace, 246
- gsl_rstat_workspace, 246
- fgsl::fgsl_sf_legendre_t, 246
- gsl_sf_legendre_t, 246
- fgsl::fgsl_sf_mathieu_workspace, 247
- gsl_sf_mathieu_workspace, 247
- fgsl::fgsl_sf_result, 247
- err, 247
- val, 247
- fgsl::fgsl_sf_result_e10, 248
- e10, 248
- err, 248
- val, 248
- fgsl::fgsl_siman_params_t, 248
- gsl_siman_params_t, 249
- fgsl::fgsl_splinalg_itersolve, 256
- gsl_splinalg_itersolve, 256
- fgsl::fgsl_splinalg_itersolve_type, 257
- which, 257
- fgsl::fgsl_spline, 257
- gsl_spline, 257
- fgsl::fgsl_spline2d, 258
- gsl_spline2d, 258
- fgsl::fgsl_spmatrix, 258
- gsl_spmatrix, 258
- fgsl::fgsl_sum_levin_u_workspace, 258
- gsl_sum_levin_u_workspace, 259

fgsl::fgsl_sum_levin_ustrunc_workspace, 259
 gsl_sum_levin_ustrunc_workspace, 259
 fgsl::fgsl_vector, 259
 gsl_vector, 259
 fgsl::fgsl_vector_complex, 261
 gsl_vector_complex, 261
 fgsl::fgsl_vector_int, 263
 gsl_vector_int, 263
 fgsl::fgsl_wavelet, 264
 gsl_wavelet, 264
 fgsl::fgsl_wavelet_type, 265
 which, 265
 fgsl::fgsl_wavelet_workspace, 265
 gsl_wavelet_workspace, 265
 fgsl::gsl_complex, 274
 dat, 274
 fgsl::gsl_sf_result, 274
 err, 275
 val, 275
 fgsl::gsl_sf_result_e10, 275
 e10, 275
 err, 275
 val, 275
 fgsl_acosh
 math.finc, 533
 fgsl_asinh
 math.finc, 533
 fgsl_atanh
 math.finc, 533
 fgsl_aux_fdfsolver_alloc
 roots.finc, 804
 fgsl_aux_fminimizer_alloc
 min.finc, 545
 fgsl_aux_fsolver_alloc
 roots.finc, 804
 fgsl_aux_interp2d_alloc
 interp.finc, 439
 fgsl_aux_interp_alloc
 interp.finc, 439
 fgsl_aux_matrix_complex_align
 array.finc, 293
 fgsl_aux_matrix_complex_free
 array.finc, 293
 fgsl_aux_matrix_complex_init
 array.finc, 294
 fgsl_aux_matrix_complex_size
 array.finc, 294
 fgsl_aux_matrix_double_align
 array.finc, 294
 fgsl_aux_matrix_double_free
 array.finc, 294
 fgsl_aux_matrix_double_init
 array.finc, 294
 fgsl_aux_matrix_double_size
 array.finc, 294
 fgsl_aux_multifit_fdfsolver_alloc
 multifit.finc, 593
 fgsl_aux_multifit_fsolver_alloc
 multifit.finc, 593
 fgsl_aux_multifit_robust_alloc
 multifit.finc, 593
 fgsl_aux_multilarge_linear_alloc
 multilarge.finc, 616
 fgsl_aux_multimin_fdfminimizer_alloc
 multimin.finc, 625
 fgsl_aux_multimin_fminimizer_alloc
 multimin.finc, 625
 fgsl_aux_multiroot_fdfsolver_alloc
 multiroots.finc, 634
 fgsl_aux_multiroot_fsolver_alloc
 multiroots.finc, 634
 fgsl_aux_ntuple_data
 ntuple.finc, 659
 fgsl_aux_ntuple_size
 ntuple.finc, 660
 fgsl_aux_odeiv2_step_alloc
 ode.finc, 677
 fgsl_aux_odeiv_step_alloc
 ode.finc, 677
 fgsl_aux_qrng_assign
 rng.finc, 765
 fgsl_aux_rng_assign
 rng.finc, 765
 fgsl_aux_splinalg_itersolve_alloc
 splinalg.finc, 989
 fgsl_aux_vector_complex_align
 array.finc, 295
 fgsl_aux_vector_complex_free
 array.finc, 295
 fgsl_aux_vector_complex_init
 array.finc, 295
 fgsl_aux_vector_complex_size
 array.finc, 295
 fgsl_aux_vector_complex_stride
 array.finc, 295
 fgsl_aux_vector_double_align
 array.finc, 295
 fgsl_aux_vector_double_free
 array.finc, 296
 fgsl_aux_vector_double_init
 array.finc, 296
 fgsl_aux_vector_double_size
 array.finc, 296
 fgsl_aux_vector_double_stride
 array.finc, 296
 fgsl_aux_vector_int_align
 array.finc, 296
 fgsl_aux_vector_int_free
 array.finc, 296
 fgsl_aux_vector_int_init
 array.finc, 297
 fgsl_aux_vector_int_size
 array.finc, 297
 fgsl_aux_vector_int_stride
 array.finc, 297
 fgsl_aux_wavelet_alloc

- wavelet.finc, 1035
- fgsl_bspline_alloc
 - bspline.finc, 300
- fgsl_bspline_deriv_eval
 - bspline.finc, 300
- fgsl_bspline_deriv_eval_nonzero
 - bspline.finc, 300
- fgsl_bspline_eval
 - bspline.finc, 300
- fgsl_bspline_eval_nonzero
 - bspline.finc, 300
- fgsl_bspline_free
 - bspline.finc, 300
- fgsl_bspline_greville_abscissa
 - bspline.finc, 301
- fgsl_bspline_knots
 - bspline.finc, 301
- fgsl_bspline_knots_greville
 - bspline.finc, 301
- fgsl_bspline_knots_uniform
 - bspline.finc, 301
- fgsl_bspline_ncoeffs
 - bspline.finc, 301
- fgsl_cdf_beta_p
 - rng.finc, 725
- fgsl_cdf_beta_pinv
 - rng.finc, 725
- fgsl_cdf_beta_q
 - rng.finc, 726
- fgsl_cdf_beta_qinv
 - rng.finc, 726
- fgsl_cdf_binomial_p
 - rng.finc, 726
- fgsl_cdf_binomial_q
 - rng.finc, 726
- fgsl_cdf_cauchy_p
 - rng.finc, 726
- fgsl_cdf_cauchy_pinv
 - rng.finc, 726
- fgsl_cdf_cauchy_q
 - rng.finc, 727
- fgsl_cdf_cauchy_qinv
 - rng.finc, 727
- fgsl_cdf_chisq_p
 - rng.finc, 727
- fgsl_cdf_chisq_pinv
 - rng.finc, 727
- fgsl_cdf_chisq_q
 - rng.finc, 727
- fgsl_cdf_chisq_qinv
 - rng.finc, 727
- fgsl_cdf_exponential_p
 - rng.finc, 728
- fgsl_cdf_exponential_pinv
 - rng.finc, 728
- fgsl_cdf_exponential_q
 - rng.finc, 728
- fgsl_cdf_exponential_qinv
 - rng.finc, 728
- rng.finc, 728
- fgsl_cdf_exppow_p
 - rng.finc, 728
- fgsl_cdf_exppow_q
 - rng.finc, 728
- fgsl_cdf_fdist_p
 - rng.finc, 729
- fgsl_cdf_fdist_pinv
 - rng.finc, 729
- fgsl_cdf_fdist_q
 - rng.finc, 729
- fgsl_cdf_fdist_qinv
 - rng.finc, 729
- fgsl_cdf_flat_p
 - rng.finc, 729
- fgsl_cdf_flat_pinv
 - rng.finc, 729
- fgsl_cdf_flat_q
 - rng.finc, 730
- fgsl_cdf_flat_qinv
 - rng.finc, 730
- fgsl_cdf_gamma_p
 - rng.finc, 730
- fgsl_cdf_gamma_pinv
 - rng.finc, 730
- fgsl_cdf_gamma_q
 - rng.finc, 730
- fgsl_cdf_gamma_qinv
 - rng.finc, 730
- fgsl_cdf_gaussian_p
 - rng.finc, 731
- fgsl_cdf_gaussian_pinv
 - rng.finc, 731
- fgsl_cdf_gaussian_q
 - rng.finc, 731
- fgsl_cdf_gaussian_qinv
 - rng.finc, 731
- fgsl_cdf_geometric_p
 - rng.finc, 731
- fgsl_cdf_geometric_q
 - rng.finc, 731
- fgsl_cdf_gumbel1_p
 - rng.finc, 732
- fgsl_cdf_gumbel1_pinv
 - rng.finc, 732
- fgsl_cdf_gumbel1_q
 - rng.finc, 732
- fgsl_cdf_gumbel1_qinv
 - rng.finc, 732
- fgsl_cdf_gumbel2_p
 - rng.finc, 732
- fgsl_cdf_gumbel2_pinv
 - rng.finc, 732
- fgsl_cdf_gumbel2_q
 - rng.finc, 733
- fgsl_cdf_gumbel2_qinv
 - rng.finc, 733
- fgsl_cdf_hypergeometric_p

- rng.finc, [733](#)
- fgsl_cdf_hypergeometric_q
 - rng.finc, [733](#)
- fgsl_cdf_laplace_p
 - rng.finc, [733](#)
- fgsl_cdf_laplace_pinv
 - rng.finc, [734](#)
- fgsl_cdf_laplace_q
 - rng.finc, [734](#)
- fgsl_cdf_laplace_qinv
 - rng.finc, [734](#)
- fgsl_cdf_logistic_p
 - rng.finc, [734](#)
- fgsl_cdf_logistic_pinv
 - rng.finc, [734](#)
- fgsl_cdf_logistic_q
 - rng.finc, [734](#)
- fgsl_cdf_logistic_qinv
 - rng.finc, [735](#)
- fgsl_cdf_lognormal_p
 - rng.finc, [735](#)
- fgsl_cdf_lognormal_pinv
 - rng.finc, [735](#)
- fgsl_cdf_lognormal_q
 - rng.finc, [735](#)
- fgsl_cdf_lognormal_qinv
 - rng.finc, [735](#)
- fgsl_cdf_negative_binomial_p
 - rng.finc, [735](#)
- fgsl_cdf_negative_binomial_q
 - rng.finc, [736](#)
- fgsl_cdf_pareto_p
 - rng.finc, [736](#)
- fgsl_cdf_pareto_pinv
 - rng.finc, [736](#)
- fgsl_cdf_pareto_q
 - rng.finc, [736](#)
- fgsl_cdf_pareto_qinv
 - rng.finc, [736](#)
- fgsl_cdf_pascal_p
 - rng.finc, [736](#)
- fgsl_cdf_pascal_q
 - rng.finc, [737](#)
- fgsl_cdf_poisson_p
 - rng.finc, [737](#)
- fgsl_cdf_poisson_q
 - rng.finc, [737](#)
- fgsl_cdf_rayleigh_p
 - rng.finc, [737](#)
- fgsl_cdf_rayleigh_pinv
 - rng.finc, [737](#)
- fgsl_cdf_rayleigh_q
 - rng.finc, [737](#)
- fgsl_cdf_rayleigh_qinv
 - rng.finc, [738](#)
- fgsl_cdf_tdist_p
 - rng.finc, [738](#)
- fgsl_cdf_tdist_pinv
 - rng.finc, [738](#)
- fgsl_cdf_tdist_q
 - rng.finc, [738](#)
- fgsl_cdf_tdist_qinv
 - rng.finc, [738](#)
- fgsl_cdf_ugaussian_p
 - rng.finc, [738](#)
- fgsl_cdf_ugaussian_pinv
 - rng.finc, [739](#)
- fgsl_cdf_ugaussian_q
 - rng.finc, [739](#)
- fgsl_cdf_ugaussian_qinv
 - rng.finc, [739](#)
- fgsl_cdf_weibull_p
 - rng.finc, [739](#)
- fgsl_cdf_weibull_pinv
 - rng.finc, [739](#)
- fgsl_cdf_weibull_q
 - rng.finc, [739](#)
- fgsl_cdf_weibull_qinv
 - rng.finc, [740](#)
- fgsl_char
 - fgsl, [111](#)
- fgsl_cheb_alloc
 - chebyshev.finc, [305](#)
- fgsl_cheb_calc_deriv
 - chebyshev.finc, [305](#)
- fgsl_cheb_calc_integ
 - chebyshev.finc, [305](#)
- fgsl_cheb_coeffs
 - chebyshev.finc, [305](#)
- fgsl_cheb_eval
 - chebyshev.finc, [305](#)
- fgsl_cheb_eval_err
 - chebyshev.finc, [305](#)
- fgsl_cheb_eval_n
 - chebyshev.finc, [305](#)
- fgsl_cheb_eval_n_err
 - chebyshev.finc, [306](#)
- fgsl_cheb_free
 - chebyshev.finc, [306](#)
- fgsl_cheb_init
 - chebyshev.finc, [306](#)
- fgsl_cheb_order
 - chebyshev.finc, [306](#)
- fgsl_cheb_series_status
 - chebyshev.finc, [306](#)
 - fgsl_well_defined, [267](#)
- fgsl_cheb_size
 - chebyshev.finc, [306](#)
- fgsl_close
 - io.finc, [455](#)
- fgsl_combination_alloc
 - permutation.finc, [690](#)
- fgsl_combination_calloc
 - permutation.finc, [690](#)
- fgsl_combination_data
 - permutation.finc, [690](#)

- fgsl_combination_fprintf
 - permutation.finc, [690](#)
- fgsl_combination_fread
 - permutation.finc, [690](#)
- fgsl_combination_free
 - permutation.finc, [690](#)
- fgsl_combination_fscanf
 - permutation.finc, [690](#)
- fgsl_combination_fwrite
 - permutation.finc, [691](#)
- fgsl_combination_get
 - permutation.finc, [691](#)
- fgsl_combination_init_first
 - permutation.finc, [691](#)
- fgsl_combination_init_last
 - permutation.finc, [691](#)
- fgsl_combination_k
 - permutation.finc, [691](#)
- fgsl_combination_memcpy
 - permutation.finc, [691](#)
- fgsl_combination_n
 - permutation.finc, [692](#)
- fgsl_combination_next
 - permutation.finc, [692](#)
- fgsl_combination_prev
 - permutation.finc, [692](#)
- fgsl_combination_status
 - fgsl_well_defined, [267](#)
 - permutation.finc, [692](#)
- fgsl_combination_valid
 - permutation.finc, [692](#)
- fgsl_complex_arccos
 - complex.finc, [311](#)
- fgsl_complex_arccos_real
 - complex.finc, [311](#)
- fgsl_complex_arccosh
 - complex.finc, [311](#)
- fgsl_complex_arccosh_real
 - complex.finc, [311](#)
- fgsl_complex_arccot
 - complex.finc, [311](#)
- fgsl_complex_arccoth
 - complex.finc, [311](#)
- fgsl_complex_arccsc
 - complex.finc, [311](#)
- fgsl_complex_arccsc_real
 - complex.finc, [312](#)
- fgsl_complex_arccsch
 - complex.finc, [312](#)
- fgsl_complex_arcsec
 - complex.finc, [312](#)
- fgsl_complex_arcsec_real
 - complex.finc, [312](#)
- fgsl_complex_arcsech
 - complex.finc, [312](#)
- fgsl_complex_arcsin
 - complex.finc, [312](#)
- fgsl_complex_arcsin_real
 - complex.finc, [312](#)
- fgsl_complex_arcsinh
 - complex.finc, [313](#)
- fgsl_complex_arctan
 - complex.finc, [313](#)
- fgsl_complex_arctanh
 - complex.finc, [313](#)
- fgsl_complex_arctanh_real
 - complex.finc, [313](#)
- fgsl_complex_arg
 - complex.finc, [313](#)
- fgsl_complex_log10
 - complex.finc, [313](#)
- fgsl_complex_log_b
 - complex.finc, [313](#)
- fgsl_complex_logabs
 - complex.finc, [314](#)
- fgsl_complex_poly_complex_eval
 - poly.finc, [715](#)
- fgsl_complex_to_complex
 - assignment(=), [181](#)
 - complex.finc, [314](#)
- fgsl_const_cgsm_acre
 - fgsl, [111](#)
- fgsl_const_cgsm_angstrom
 - fgsl, [111](#)
- fgsl_const_cgsm_astronomical_unit
 - fgsl, [111](#)
- fgsl_const_cgsm_bar
 - fgsl, [111](#)
- fgsl_const_cgsm_barn
 - fgsl, [112](#)
- fgsl_const_cgsm_bohr_magneton
 - fgsl, [112](#)
- fgsl_const_cgsm_bohr_radius
 - fgsl, [112](#)
- fgsl_const_cgsm_boltzmann
 - fgsl, [112](#)
- fgsl_const_cgsm_btu
 - fgsl, [112](#)
- fgsl_const_cgsm_calorie
 - fgsl, [112](#)
- fgsl_const_cgsm_canadian_gallon
 - fgsl, [112](#)
- fgsl_const_cgsm_carat
 - fgsl, [113](#)
- fgsl_const_cgsm_cup
 - fgsl, [113](#)
- fgsl_const_cgsm_curie
 - fgsl, [113](#)
- fgsl_const_cgsm_day
 - fgsl, [113](#)
- fgsl_const_cgsm_dyne
 - fgsl, [113](#)
- fgsl_const_cgsm_electron_charge
 - fgsl, [113](#)
- fgsl_const_cgsm_electron_magnetic_moment
 - fgsl, [113](#)

- fgsl_const_cgsm_electron_volt
 - fgsl, [114](#)
- fgsl_const_cgsm_erg
 - fgsl, [114](#)
- fgsl_const_cgsm_faraday
 - fgsl, [114](#)
- fgsl_const_cgsm_fathom
 - fgsl, [114](#)
- fgsl_const_cgsm_fluid_ounce
 - fgsl, [114](#)
- fgsl_const_cgsm_foot
 - fgsl, [114](#)
- fgsl_const_cgsm_footcandle
 - fgsl, [114](#)
- fgsl_const_cgsm_footlambert
 - fgsl, [115](#)
- fgsl_const_cgsm_gauss
 - fgsl, [115](#)
- fgsl_const_cgsm_gram_force
 - fgsl, [115](#)
- fgsl_const_cgsm_grav_accel
 - fgsl, [115](#)
- fgsl_const_cgsm_gravitational_constant
 - fgsl, [115](#)
- fgsl_const_cgsm_hectare
 - fgsl, [115](#)
- fgsl_const_cgsm_horsepower
 - fgsl, [115](#)
- fgsl_const_cgsm_hour
 - fgsl, [116](#)
- fgsl_const_cgsm_inch
 - fgsl, [116](#)
- fgsl_const_cgsm_inch_of_mercury
 - fgsl, [116](#)
- fgsl_const_cgsm_inch_of_water
 - fgsl, [116](#)
- fgsl_const_cgsm_joule
 - fgsl, [116](#)
- fgsl_const_cgsm_kilometers_per_hour
 - fgsl, [116](#)
- fgsl_const_cgsm_kilopound_force
 - fgsl, [116](#)
- fgsl_const_cgsm_knot
 - fgsl, [117](#)
- fgsl_const_cgsm_lambert
 - fgsl, [117](#)
- fgsl_const_cgsm_light_year
 - fgsl, [117](#)
- fgsl_const_cgsm_liter
 - fgsl, [117](#)
- fgsl_const_cgsm_lumen
 - fgsl, [117](#)
- fgsl_const_cgsm_lux
 - fgsl, [117](#)
- fgsl_const_cgsm_mass_electron
 - fgsl, [117](#)
- fgsl_const_cgsm_mass_muon
 - fgsl, [118](#)
- fgsl_const_cgsm_mass_neutron
 - fgsl, [118](#)
- fgsl_const_cgsm_mass_proton
 - fgsl, [118](#)
- fgsl_const_cgsm_meter_of_mercury
 - fgsl, [118](#)
- fgsl_const_cgsm_metric_ton
 - fgsl, [118](#)
- fgsl_const_cgsm_micron
 - fgsl, [118](#)
- fgsl_const_cgsm_mil
 - fgsl, [118](#)
- fgsl_const_cgsm_mile
 - fgsl, [119](#)
- fgsl_const_cgsm_miles_per_hour
 - fgsl, [119](#)
- fgsl_const_cgsm_minute
 - fgsl, [119](#)
- fgsl_const_cgsm_molar_gas
 - fgsl, [119](#)
- fgsl_const_cgsm_nautical_mile
 - fgsl, [119](#)
- fgsl_const_cgsm_newton
 - fgsl, [119](#)
- fgsl_const_cgsm_nuclear_magneton
 - fgsl, [119](#)
- fgsl_const_cgsm_ounce_mass
 - fgsl, [120](#)
- fgsl_const_cgsm_parsec
 - fgsl, [120](#)
- fgsl_const_cgsm_phot
 - fgsl, [120](#)
- fgsl_const_cgsm_pint
 - fgsl, [120](#)
- fgsl_const_cgsm_plancks_constant_h
 - fgsl, [120](#)
- fgsl_const_cgsm_plancks_constant_hbar
 - fgsl, [120](#)
- fgsl_const_cgsm_point
 - fgsl, [120](#)
- fgsl_const_cgsm_poise
 - fgsl, [121](#)
- fgsl_const_cgsm_pound_force
 - fgsl, [121](#)
- fgsl_const_cgsm_pound_mass
 - fgsl, [121](#)
- fgsl_const_cgsm_poundal
 - fgsl, [121](#)
- fgsl_const_cgsm_proton_magnetic_moment
 - fgsl, [121](#)
- fgsl_const_cgsm_psi
 - fgsl, [121](#)
- fgsl_const_cgsm_quart
 - fgsl, [121](#)
- fgsl_const_cgsm_rad
 - fgsl, [122](#)
- fgsl_const_cgsm_roentgen
 - fgsl, [122](#)

- fgsl_const_cgsm_rydberg
 - fgsl, [122](#)
- fgsl_const_cgsm_solar_mass
 - fgsl, [122](#)
- fgsl_const_cgsm_speed_of_light
 - fgsl, [122](#)
- fgsl_const_cgsm_standard_gas_volume
 - fgsl, [122](#)
- fgsl_const_cgsm_std_atmosphere
 - fgsl, [122](#)
- fgsl_const_cgsm_stefan_boltzmann_constant
 - fgsl, [123](#)
- fgsl_const_cgsmstilb
 - fgsl, [123](#)
- fgsl_const_cgsmstokes
 - fgsl, [123](#)
- fgsl_const_cgsm_tablespoon
 - fgsl, [123](#)
- fgsl_const_cgsm_tspoon
 - fgsl, [123](#)
- fgsl_const_cgsm_texpoint
 - fgsl, [123](#)
- fgsl_const_cgsm_therm
 - fgsl, [123](#)
- fgsl_const_cgsm_thomson_cross_section
 - fgsl, [124](#)
- fgsl_const_cgsm_ton
 - fgsl, [124](#)
- fgsl_const_cgsm_torr
 - fgsl, [124](#)
- fgsl_const_cgsm_troy_ounce
 - fgsl, [124](#)
- fgsl_const_cgsm_uk_gallon
 - fgsl, [124](#)
- fgsl_const_cgsm_uk_ton
 - fgsl, [124](#)
- fgsl_const_cgsm_unified_atomic_mass
 - fgsl, [124](#)
- fgsl_const_cgsm_us_gallon
 - fgsl, [125](#)
- fgsl_const_cgsm_week
 - fgsl, [125](#)
- fgsl_const_cgsm_yard
 - fgsl, [125](#)
- fgsl_const_mkasa_acre
 - fgsl, [125](#)
- fgsl_const_mkasa_angstrom
 - fgsl, [125](#)
- fgsl_const_mkasa_astronomical_unit
 - fgsl, [125](#)
- fgsl_const_mkasa_bar
 - fgsl, [125](#)
- fgsl_const_mkasa_barn
 - fgsl, [126](#)
- fgsl_const_mkasa_bohr_magneton
 - fgsl, [126](#)
- fgsl_const_mkasa_bohr_radius
 - fgsl, [126](#)
- fgsl_const_mkasa_boltzmann
 - fgsl, [126](#)
- fgsl_const_mkasa_btu
 - fgsl, [126](#)
- fgsl_const_mkasa_calorie
 - fgsl, [126](#)
- fgsl_const_mkasa_canadian_gallon
 - fgsl, [126](#)
- fgsl_const_mkasa_carat
 - fgsl, [127](#)
- fgsl_const_mkasa_cup
 - fgsl, [127](#)
- fgsl_const_mkasa_curie
 - fgsl, [127](#)
- fgsl_const_mkasa_day
 - fgsl, [127](#)
- fgsl_const_mkasa_debye
 - fgsl, [127](#)
- fgsl_const_mkasa_dyne
 - fgsl, [127](#)
- fgsl_const_mkasa_electron_charge
 - fgsl, [127](#)
- fgsl_const_mkasa_electron_magnetic_moment
 - fgsl, [128](#)
- fgsl_const_mkasa_electron_volt
 - fgsl, [128](#)
- fgsl_const_mkasa_erg
 - fgsl, [128](#)
- fgsl_const_mkasa_faraday
 - fgsl, [128](#)
- fgsl_const_mkasa_fathom
 - fgsl, [128](#)
- fgsl_const_mkasa_fluid_ounce
 - fgsl, [128](#)
- fgsl_const_mkasa_foot
 - fgsl, [128](#)
- fgsl_const_mkasa_footcandle
 - fgsl, [129](#)
- fgsl_const_mkasa_footlambert
 - fgsl, [129](#)
- fgsl_const_mkasa_gauss
 - fgsl, [129](#)
- fgsl_const_mkasa_gram_force
 - fgsl, [129](#)
- fgsl_const_mkasa_grav_accel
 - fgsl, [129](#)
- fgsl_const_mkasa_gravitational_constant
 - fgsl, [129](#)
- fgsl_const_mkasa_hectare
 - fgsl, [129](#)
- fgsl_const_mkasa_horsepower
 - fgsl, [130](#)
- fgsl_const_mkasa_hour
 - fgsl, [130](#)
- fgsl_const_mkasa_inch
 - fgsl, [130](#)
- fgsl_const_mkasa_inch_of_mercury
 - fgsl, [130](#)

fgsl_const_mksa_inch_of_water
fgsl, [130](#)

fgsl_const_mksa_joule
fgsl, [130](#)

fgsl_const_mksa_kilometers_per_hour
fgsl, [130](#)

fgsl_const_mksa_kilopound_force
fgsl, [131](#)

fgsl_const_mksa_knot
fgsl, [131](#)

fgsl_const_mksa_lambert
fgsl, [131](#)

fgsl_const_mksa_light_year
fgsl, [131](#)

fgsl_const_mksa_liter
fgsl, [131](#)

fgsl_const_mksa_lumen
fgsl, [131](#)

fgsl_const_mksa_lux
fgsl, [131](#)

fgsl_const_mksa_mass_electron
fgsl, [132](#)

fgsl_const_mksa_mass_muon
fgsl, [132](#)

fgsl_const_mksa_mass_neutron
fgsl, [132](#)

fgsl_const_mksa_mass_proton
fgsl, [132](#)

fgsl_const_mksa_meter_of_mercury
fgsl, [132](#)

fgsl_const_mksa_metric_ton
fgsl, [132](#)

fgsl_const_mksa_micron
fgsl, [132](#)

fgsl_const_mksa_mil
fgsl, [133](#)

fgsl_const_mksa_mile
fgsl, [133](#)

fgsl_const_mksa_miles_per_hour
fgsl, [133](#)

fgsl_const_mksa_minute
fgsl, [133](#)

fgsl_const_mksa_molar_gas
fgsl, [133](#)

fgsl_const_mksa_nautical_mile
fgsl, [133](#)

fgsl_const_mksa_newton
fgsl, [133](#)

fgsl_const_mksa_nuclear_magneton
fgsl, [134](#)

fgsl_const_mksa_ounce_mass
fgsl, [134](#)

fgsl_const_mksa_parsec
fgsl, [134](#)

fgsl_const_mksa_phot
fgsl, [134](#)

fgsl_const_mksa_pint
fgsl, [134](#)

fgsl_const_mksa_plancks_constant_h
fgsl, [134](#)

fgsl_const_mksa_plancks_constant_hbar
fgsl, [134](#)

fgsl_const_mksa_point
fgsl, [135](#)

fgsl_const_mksa_poise
fgsl, [135](#)

fgsl_const_mksa_pound_force
fgsl, [135](#)

fgsl_const_mksa_pound_mass
fgsl, [135](#)

fgsl_const_mksa_poundal
fgsl, [135](#)

fgsl_const_mksa_proton_magnetic_moment
fgsl, [135](#)

fgsl_const_mksa_psi
fgsl, [135](#)

fgsl_const_mksa_quart
fgsl, [136](#)

fgsl_const_mksa_rad
fgsl, [136](#)

fgsl_const_mksa_roentgen
fgsl, [136](#)

fgsl_const_mksa_rydberg
fgsl, [136](#)

fgsl_const_mksa_solar_mass
fgsl, [136](#)

fgsl_const_mksa_speed_of_light
fgsl, [136](#)

fgsl_const_mksa_standard_gas_volume
fgsl, [136](#)

fgsl_const_mksa_std_atmosphere
fgsl, [137](#)

fgsl_const_mksa_stefan_boltzmann_constant
fgsl, [137](#)

fgsl_const_mksastilb
fgsl, [137](#)

fgsl_const_mksa_stokes
fgsl, [137](#)

fgsl_const_mksa_tablespoon
fgsl, [137](#)

fgsl_const_mksa_tea_spoon
fgsl, [137](#)

fgsl_const_mksa_texpoint
fgsl, [137](#)

fgsl_const_mksa_therm
fgsl, [138](#)

fgsl_const_mksa_thomson_cross_section
fgsl, [138](#)

fgsl_const_mksa_ton
fgsl, [138](#)

fgsl_const_mksa_torr
fgsl, [138](#)

fgsl_const_mksa_troy_ounce
fgsl, [138](#)

fgsl_const_mksa_uk_gallon
fgsl, [138](#)

fgsl_const_mkasa_uk_ton
fgsl, [138](#)

fgsl_const_mkasa_unified_atomic_mass
fgsl, [139](#)

fgsl_const_mkasa_us_gallon
fgsl, [139](#)

fgsl_const_mkasa_vacuum_permeability
fgsl, [139](#)

fgsl_const_mkasa_vacuum_permittivity
fgsl, [139](#)

fgsl_const_mkasa_week
fgsl, [139](#)

fgsl_const_mkasa_yard
fgsl, [139](#)

fgsl_const_num_atto
fgsl, [139](#)

fgsl_const_num_avogadro
fgsl, [140](#)

fgsl_const_num_exa
fgsl, [140](#)

fgsl_const_num_femto
fgsl, [140](#)

fgsl_const_num_fine_structure
fgsl, [140](#)

fgsl_const_num_giga
fgsl, [140](#)

fgsl_const_num_kilo
fgsl, [140](#)

fgsl_const_num_mega
fgsl, [140](#)

fgsl_const_num_micro
fgsl, [141](#)

fgsl_const_num_milli
fgsl, [141](#)

fgsl_const_num_nano
fgsl, [141](#)

fgsl_const_num_peta
fgsl, [141](#)

fgsl_const_num_pico
fgsl, [141](#)

fgsl_const_num_tera
fgsl, [141](#)

fgsl_const_num_yocto
fgsl, [141](#)

fgsl_const_num_yotta
fgsl, [141](#)

fgsl_const_num_zepto
fgsl, [142](#)

fgsl_const_num_zetta
fgsl, [142](#)

fgsl_continue
fgsl, [142](#)

fgsl_cstderr
io.finc, [458](#)

fgsl_cstdin
io.finc, [458](#)

fgsl_cstdout
io.finc, [458](#)

fgsl_deriv_backward
deriv.finc, [318](#)

fgsl_deriv_central
deriv.finc, [318](#)

fgsl_deriv_forward
deriv.finc, [319](#)

fgsl_dht_alloc
dht.finc, [320](#)

fgsl_dht_apply
dht.finc, [321](#)

fgsl_dht_free
dht.finc, [321](#)

fgsl_dht_init
dht.finc, [321](#)

fgsl_dht_k_sample
dht.finc, [321](#)

fgsl_dht_new
dht.finc, [321](#)

fgsl_dht_status
dht.finc, [321](#)
fgsl_well_defined, [267](#)

fgsl_dht_x_sample
dht.finc, [322](#)

fgsl_double
fgsl, [142](#)

fgsl_double_complex
fgsl, [142](#)

fgsl_ebadfunc
fgsl, [142](#)

fgsl_ebadlen
fgsl, [142](#)

fgsl_ebadtol
fgsl, [142](#)

fgsl_ecache
fgsl, [143](#)

fgsl_ediverge
fgsl, [143](#)

fgsl_edom
fgsl, [143](#)

fgsl_efactor
fgsl, [143](#)

fgsl_efault
fgsl, [143](#)

fgsl_eigen_gen
eigen.finc, [325](#)

fgsl_eigen_gen_alloc
eigen.finc, [325](#)

fgsl_eigen_gen_free
eigen.finc, [325](#)

fgsl_eigen_gen_params
eigen.finc, [325](#)

fgsl_eigen_gen_qz
eigen.finc, [325](#)

fgsl_eigen_genherm
eigen.finc, [326](#)

fgsl_eigen_genherm_alloc
eigen.finc, [326](#)

fgsl_eigen_genherm_free

eigen.finc, [326](#)
fgsl_eigen_genhermv
 eigen.finc, [326](#)
fgsl_eigen_genhermv_alloc
 eigen.finc, [326](#)
fgsl_eigen_genhermv_free
 eigen.finc, [327](#)
fgsl_eigen_genhermv_sort
 eigen.finc, [327](#)
fgsl_eigen_gensymm
 eigen.finc, [327](#)
fgsl_eigen_gensymm_alloc
 eigen.finc, [327](#)
fgsl_eigen_gensymm_free
 eigen.finc, [327](#)
fgsl_eigen_gensymmv
 eigen.finc, [327](#)
fgsl_eigen_gensymmv_alloc
 eigen.finc, [328](#)
fgsl_eigen_gensymmv_free
 eigen.finc, [328](#)
fgsl_eigen_gensymmv_sort
 eigen.finc, [328](#)
fgsl_eigen_genv
 eigen.finc, [328](#)
fgsl_eigen_genv_alloc
 eigen.finc, [328](#)
fgsl_eigen_genv_free
 eigen.finc, [328](#)
fgsl_eigen_genv_qz
 eigen.finc, [329](#)
fgsl_eigen_genv_sort
 eigen.finc, [329](#)
fgsl_eigen_herm
 eigen.finc, [329](#)
fgsl_eigen_herm_alloc
 eigen.finc, [329](#)
fgsl_eigen_herm_free
 eigen.finc, [329](#)
fgsl_eigen_hermv
 eigen.finc, [330](#)
fgsl_eigen_hermv_alloc
 eigen.finc, [330](#)
fgsl_eigen_hermv_free
 eigen.finc, [330](#)
fgsl_eigen_hermv_sort
 eigen.finc, [330](#)
fgsl_eigen_nonsymm
 eigen.finc, [330](#)
fgsl_eigen_nonsymm_alloc
 eigen.finc, [330](#)
fgsl_eigen_nonsymm_free
 eigen.finc, [331](#)
fgsl_eigen_nonsymm_params
 eigen.finc, [331](#)
fgsl_eigen_nonsymm_z
 eigen.finc, [331](#)
fgsl_eigen_nonsymmv
 eigen.finc, [331](#)
fgsl_eigen_nonsymmv_alloc
 eigen.finc, [331](#)
fgsl_eigen_nonsymmv_free
 eigen.finc, [331](#)
fgsl_eigen_nonsymmv_params
 eigen.finc, [332](#)
fgsl_eigen_nonsymmv_sort
 eigen.finc, [332](#)
fgsl_eigen_nonsymmv_z
 eigen.finc, [332](#)
fgsl_eigen_sort_abs_asc
 fgsl, [143](#)
fgsl_eigen_sort_abs_desc
 fgsl, [143](#)
fgsl_eigen_sort_val_asc
 fgsl, [143](#)
fgsl_eigen_sort_val_desc
 fgsl, [144](#)
fgsl_eigen_symm
 eigen.finc, [332](#)
fgsl_eigen_symm_alloc
 eigen.finc, [332](#)
fgsl_eigen_symm_free
 eigen.finc, [332](#)
fgsl_eigen_symmv
 eigen.finc, [333](#)
fgsl_eigen_symmv_alloc
 eigen.finc, [333](#)
fgsl_eigen_symmv_free
 eigen.finc, [333](#)
fgsl_eigen_symmv_sort
 eigen.finc, [333](#)
fgsl_einval
 fgsl, [144](#)
fgsl_eloss
 fgsl, [144](#)
fgsl_emaxiter
 fgsl, [144](#)
fgsl_enomem
 fgsl, [144](#)
fgsl_enoprog
 fgsl, [144](#)
fgsl_enoproj
 fgsl, [144](#)
fgsl_enotsqr
 fgsl, [144](#)
fgsl_eof
 fgsl, [145](#)
fgsl_eovrlw
 fgsl, [145](#)
fgsl_erange
 fgsl, [145](#)
fgsl_eround
 fgsl, [145](#)
fgsl_error
 error.finc, [343](#)
fgsl_error_handler_init

- error.finc, [344](#)
- fgsl_error_handler_status
 - error.finc, [344](#)
 - fgsl_well_defined, [267](#)
- fgsl_erunaway
 - fgsl, [145](#)
- fgsl_esanity
 - fgsl, [145](#)
- fgsl_esing
 - fgsl, [145](#)
- fgsl_etable
 - fgsl, [145](#)
- fgsl_etol
 - fgsl, [146](#)
- fgsl_etolf
 - fgsl, [146](#)
- fgsl_etolg
 - fgsl, [146](#)
- fgsl_etolx
 - fgsl, [146](#)
- fgsl_eundrflw
 - fgsl, [146](#)
- fgsl_eunimpl
 - fgsl, [146](#)
- fgsl_eunsup
 - fgsl, [146](#)
- fgsl_expm1
 - math.finc, [534](#)
- fgsl_extended
 - fgsl, [146](#)
- fgsl_ezerodiv
 - fgsl, [147](#)
- fgsl_failure
 - fgsl, [147](#)
- fgsl_fcmp
 - math.finc, [534](#)
- fgsl_fft_complex_backward
 - fft.finc, [346](#)
- fgsl_fft_complex_forward
 - fft.finc, [347](#)
- fgsl_fft_complex_inverse
 - fft.finc, [347](#)
- fgsl_fft_complex_radix2_backward
 - fft.finc, [347](#)
- fgsl_fft_complex_radix2_dif_backward
 - fft.finc, [347](#)
- fgsl_fft_complex_radix2_dif_forward
 - fft.finc, [347](#)
- fgsl_fft_complex_radix2_dif_inverse
 - fft.finc, [348](#)
- fgsl_fft_complex_radix2_dif_transform
 - fft.finc, [348](#)
- fgsl_fft_complex_radix2_forward
 - fft.finc, [348](#)
- fgsl_fft_complex_radix2_inverse
 - fft.finc, [348](#)
- fgsl_fft_complex_radix2_transform
 - fft.finc, [348](#)
- fgsl_fft_complex_transform
 - fft.finc, [349](#)
- fgsl_fft_complex_wavetable_alloc
 - fft.finc, [349](#)
- fgsl_fft_complex_wavetable_free
 - fft.finc, [349](#)
- fgsl_fft_complex_workspace_alloc
 - fft.finc, [349](#)
- fgsl_fft_complex_workspace_free
 - fft.finc, [349](#)
- fgsl_fft_halfcomplex_radix2_backward
 - fft.finc, [349](#)
- fgsl_fft_halfcomplex_radix2_inverse
 - fft.finc, [350](#)
- fgsl_fft_halfcomplex_transform
 - fft.finc, [350](#)
- fgsl_fft_halfcomplex_unpack
 - fft.finc, [350](#)
- fgsl_fft_halfcomplex_wavetable_alloc
 - fft.finc, [350](#)
- fgsl_fft_halfcomplex_wavetable_free
 - fft.finc, [350](#)
- fgsl_fft_real_radix2_transform
 - fft.finc, [350](#)
- fgsl_fft_real_transform
 - fft.finc, [351](#)
- fgsl_fft_real_unpack
 - fft.finc, [351](#)
- fgsl_fft_real_wavetable_alloc
 - fft.finc, [351](#)
- fgsl_fft_real_wavetable_free
 - fft.finc, [351](#)
- fgsl_fft_real_workspace_alloc
 - fft.finc, [351](#)
- fgsl_fft_real_workspace_free
 - fft.finc, [351](#)
- fgsl_file_status
 - fgsl_well_defined, [267](#)
 - io.finc, [456](#)
- fgsl_filter_end_padvalue
 - fgsl, [147](#)
- fgsl_filter_end_padzero
 - fgsl, [147](#)
- fgsl_filter_end_truncate
 - fgsl, [147](#)
- fgsl_filter_gaussian
 - filter.finc, [358](#)
- fgsl_filter_gaussian_alloc
 - filter.finc, [358](#)
- fgsl_filter_gaussian_free
 - filter.finc, [359](#)
- fgsl_filter_gaussian_kernel
 - filter.finc, [359](#)
- fgsl_filter_impulse
 - filter.finc, [359](#)
- fgsl_filter_impulse_alloc
 - filter.finc, [359](#)
- fgsl_filter_impulse_free

- filter.finc, [359](#)
- fgsl_filter_median
 - filter.finc, [360](#)
- fgsl_filter_median_alloc
 - filter.finc, [360](#)
- fgsl_filter_median_free
 - filter.finc, [360](#)
- fgsl_filter_rmedian
 - filter.finc, [360](#)
- fgsl_filter_rmedian_alloc
 - filter.finc, [360](#)
- fgsl_filter_rmedian_free
 - filter.finc, [360](#)
- fgsl_filter_scale_iqr
 - fgsl, [147](#)
- fgsl_filter_scale_mad
 - fgsl, [147](#)
- fgsl_filter_scale_qn
 - fgsl, [148](#)
- fgsl_filter_scale_sn
 - fgsl, [148](#)
- fgsl_finite
 - math.finc, [534](#)
- fgsl_fit_linear
 - fit.finc, [364](#)
- fgsl_fit_linear_est
 - fit.finc, [364](#)
- fgsl_fit_mul
 - fit.finc, [364](#)
- fgsl_fit_mul_est
 - fit.finc, [365](#)
- fgsl_fit_wlinear
 - fit.finc, [365](#)
- fgsl_fit_wmul
 - fit.finc, [365](#)
- fgsl_float
 - fgsl, [148](#)
- fgsl_flush
 - io.finc, [456](#)
- fgsl_fn_eval
 - math.finc, [534](#)
- fgsl_fn_eval_aux
 - math.finc, [538](#)
- fgsl_fn_fdf_eval_df
 - math.finc, [534](#)
- fgsl_fn_fdf_eval_df_aux
 - math.finc, [539](#)
- fgsl_fn_fdf_eval_f
 - math.finc, [535](#)
- fgsl_fn_fdf_eval_f_aux
 - math.finc, [539](#)
- fgsl_fn_fdf_eval_f_df
 - math.finc, [535](#)
- fgsl_fn_fdf_eval_f_df_aux
 - math.finc, [539](#)
- fgsl_frexp
 - math.finc, [536](#)
- fgsl_function_cfree
 - math.finc, [539](#)
- fgsl_function_cinit
 - math.finc, [539](#)
- fgsl_function_fdf_cfree
 - math.finc, [539](#)
- fgsl_function_fdf_cinit
 - math.finc, [540](#)
- fgsl_function_fdf_free
 - math.finc, [536](#)
- fgsl_function_fdf_init
 - math.finc, [536](#)
- fgsl_function_free
 - math.finc, [536](#)
- fgsl_function_init
 - math.finc, [537](#)
- fgsl_gslbase
 - fgsl, [148](#)
- fgsl_heapsort
 - sort.finc, [817](#)
- fgsl_heapsort_index
 - sort.finc, [818](#)
- fgsl_histogram2d_accumulate
 - histogram.finc, [369](#)
- fgsl_histogram2d_add
 - histogram.finc, [370](#)
- fgsl_histogram2d_alloc
 - histogram.finc, [370](#)
- fgsl_histogram2d_clone
 - histogram.finc, [370](#)
- fgsl_histogram2d_cov
 - histogram.finc, [370](#)
- fgsl_histogram2d_div
 - histogram.finc, [370](#)
- fgsl_histogram2d_equal_bins_p
 - histogram.finc, [370](#)
- fgsl_histogram2d_find
 - histogram.finc, [371](#)
- fgsl_histogram2d_fprintf
 - histogram.finc, [371](#)
- fgsl_histogram2d_fread
 - histogram.finc, [371](#)
- fgsl_histogram2d_free
 - histogram.finc, [371](#)
- fgsl_histogram2d_fscanf
 - histogram.finc, [371](#)
- fgsl_histogram2d_fwrite
 - histogram.finc, [371](#)
- fgsl_histogram2d_get
 - histogram.finc, [372](#)
- fgsl_histogram2d_get_xrange
 - histogram.finc, [372](#)
- fgsl_histogram2d_get_yrange
 - histogram.finc, [372](#)
- fgsl_histogram2d_increment
 - histogram.finc, [372](#)
- fgsl_histogram2d_max_bin
 - histogram.finc, [372](#)
- fgsl_histogram2d_max_val

- histogram.finc, [373](#)
- fgsl_histogram2d_memcpy
 - histogram.finc, [373](#)
- fgsl_histogram2d_min_bin
 - histogram.finc, [373](#)
- fgsl_histogram2d_min_val
 - histogram.finc, [373](#)
- fgsl_histogram2d_mul
 - histogram.finc, [373](#)
- fgsl_histogram2d_nx
 - histogram.finc, [373](#)
- fgsl_histogram2d_ny
 - histogram.finc, [374](#)
- fgsl_histogram2d_pdf_alloc
 - histogram.finc, [374](#)
- fgsl_histogram2d_pdf_free
 - histogram.finc, [374](#)
- fgsl_histogram2d_pdf_init
 - histogram.finc, [374](#)
- fgsl_histogram2d_pdf_sample
 - histogram.finc, [374](#)
- fgsl_histogram2d_reset
 - histogram.finc, [374](#)
- fgsl_histogram2d_scale
 - histogram.finc, [375](#)
- fgsl_histogram2d_set_ranges
 - histogram.finc, [375](#)
- fgsl_histogram2d_set_ranges_uniform
 - histogram.finc, [375](#)
- fgsl_histogram2d_shift
 - histogram.finc, [375](#)
- fgsl_histogram2d_sub
 - histogram.finc, [375](#)
- fgsl_histogram2d_sum
 - histogram.finc, [375](#)
- fgsl_histogram2d_xmax
 - histogram.finc, [376](#)
- fgsl_histogram2d_xmean
 - histogram.finc, [376](#)
- fgsl_histogram2d_xmin
 - histogram.finc, [376](#)
- fgsl_histogram2d_xsigma
 - histogram.finc, [376](#)
- fgsl_histogram2d_ymax
 - histogram.finc, [376](#)
- fgsl_histogram2d_ymean
 - histogram.finc, [376](#)
- fgsl_histogram2d_ymin
 - histogram.finc, [376](#)
- fgsl_histogram2d_ysigma
 - histogram.finc, [377](#)
- fgsl_histogram_accumulate
 - histogram.finc, [377](#)
- fgsl_histogram_add
 - histogram.finc, [377](#)
- fgsl_histogram_alloc
 - histogram.finc, [377](#)
- fgsl_histogram_bins
 - histogram.finc, [377](#)
- fgsl_histogram_clone
 - histogram.finc, [377](#)
- fgsl_histogram_div
 - histogram.finc, [378](#)
- fgsl_histogram_equal_bins_p
 - histogram.finc, [378](#)
- fgsl_histogram_find
 - histogram.finc, [378](#)
- fgsl_histogram_fprintf
 - histogram.finc, [378](#)
- fgsl_histogram_fread
 - histogram.finc, [378](#)
- fgsl_histogram_free
 - histogram.finc, [378](#)
- fgsl_histogram_fscanf
 - histogram.finc, [379](#)
- fgsl_histogram_fwrite
 - histogram.finc, [379](#)
- fgsl_histogram_get
 - histogram.finc, [379](#)
- fgsl_histogram_get_range
 - histogram.finc, [379](#)
- fgsl_histogram_increment
 - histogram.finc, [379](#)
- fgsl_histogram_max
 - histogram.finc, [379](#)
- fgsl_histogram_max_bin
 - histogram.finc, [380](#)
- fgsl_histogram_max_val
 - histogram.finc, [380](#)
- fgsl_histogram_mean
 - histogram.finc, [380](#)
- fgsl_histogram_memcpy
 - histogram.finc, [380](#)
- fgsl_histogram_min
 - histogram.finc, [380](#)
- fgsl_histogram_min_bin
 - histogram.finc, [380](#)
- fgsl_histogram_min_val
 - histogram.finc, [380](#)
- fgsl_histogram_mul
 - histogram.finc, [381](#)
- fgsl_histogram_pdf_alloc
 - histogram.finc, [381](#)
- fgsl_histogram_pdf_free
 - histogram.finc, [381](#)
- fgsl_histogram_pdf_init
 - histogram.finc, [381](#)
- fgsl_histogram_pdf_sample
 - histogram.finc, [381](#)
- fgsl_histogram_reset
 - histogram.finc, [381](#)
- fgsl_histogram_scale
 - histogram.finc, [382](#)
- fgsl_histogram_set_ranges
 - histogram.finc, [382](#)
- fgsl_histogram_set_ranges_uniform

- histogram.finc, 382
- fgsl_histogram_shift
 - histogram.finc, 382
- fgsl_histogram_sigma
 - histogram.finc, 382
- fgsl_histogram_status
 - fgsl_well_defined, 267
 - histogram.finc, 382
- fgsl_histogram_sub
 - histogram.finc, 383
- fgsl_histogram_sum
 - histogram.finc, 383
- fgsl_hypot
 - math.finc, 540
- fgsl_hypot3
 - math.finc, 540
- fgsl_ieee_env_setup
 - ieee.finc, 399
- fgsl_ieee_fprintf, 196
 - fgsl_ieee_fprintf_double, 197
 - fgsl_ieee_fprintf_float, 197
- fgsl_ieee_fprintf_double
 - fgsl_ieee_fprintf, 197
 - ieee.finc, 399
- fgsl_ieee_fprintf_float
 - fgsl_ieee_fprintf, 197
 - ieee.finc, 399
- fgsl_ieee_printf, 197
 - fgsl_ieee_printf_double, 197
 - fgsl_ieee_printf_float, 197
- fgsl_ieee_printf_double
 - fgsl_ieee_printf, 197
 - ieee.finc, 399
- fgsl_ieee_printf_float
 - fgsl_ieee_printf, 197
 - ieee.finc, 399
- fgsl_int
 - fgsl, 148
- fgsl_integ_cosine
 - fgsl, 148
- fgsl_integ_gauss15
 - fgsl, 148
- fgsl_integ_gauss21
 - fgsl, 148
- fgsl_integ_gauss31
 - fgsl, 149
- fgsl_integ_gauss41
 - fgsl, 149
- fgsl_integ_gauss51
 - fgsl, 149
- fgsl_integ_gauss61
 - fgsl, 149
- fgsl_integ_sine
 - fgsl, 149
- fgsl_integration_cquad
 - integration.finc, 402
- fgsl_integration_cquad_workspace_alloc
 - integration.finc, 402
- fgsl_integration_cquad_workspace_free
 - integration.finc, 402
- fgsl_integration_cquad_workspace_status
 - fgsl_well_defined, 267
 - integration.finc, 402
- fgsl_integration_fixed
 - integration.finc, 402
- fgsl_integration_fixed_alloc
 - integration.finc, 403
- fgsl_integration_fixed_chebyshev
 - fgsl, 149
- fgsl_integration_fixed_chebyshev2
 - fgsl, 149
- fgsl_integration_fixed_exponential
 - fgsl, 149
- fgsl_integration_fixed_free
 - integration.finc, 403
- fgsl_integration_fixed_gegenbauer
 - fgsl, 150
- fgsl_integration_fixed_hermite
 - fgsl, 150
- fgsl_integration_fixed_jacobi
 - fgsl, 150
- fgsl_integration_fixed_laguerre
 - fgsl, 150
- fgsl_integration_fixed_legendre
 - fgsl, 150
- fgsl_integration_fixed_n
 - integration.finc, 403
- fgsl_integration_fixed_nodes
 - integration.finc, 403
- fgsl_integration_fixed_rational
 - fgsl, 150
- fgsl_integration_fixed_weights
 - integration.finc, 403
- fgsl_integration_glfixed
 - integration.finc, 403
- fgsl_integration_glfixed_point
 - integration.finc, 404
- fgsl_integration_glfixed_table_alloc
 - integration.finc, 404
- fgsl_integration_glfixed_table_free
 - integration.finc, 404
- fgsl_integration_glfixed_table_status
 - fgsl_well_defined, 268
 - integration.finc, 404
- fgsl_integration_qag
 - integration.finc, 404
- fgsl_integration_qagi
 - integration.finc, 405
- fgsl_integration_qagil
 - integration.finc, 405
- fgsl_integration_qagiu
 - integration.finc, 405
- fgsl_integration_qagp
 - integration.finc, 405
- fgsl_integration_qags
 - integration.finc, 406

fgsl_integration_qawc
 integration.finc, 406
fgsl_integration_qawf
 integration.finc, 406
fgsl_integration_qawo
 integration.finc, 406
fgsl_integration_qawo_table_alloc
 integration.finc, 407
fgsl_integration_qawo_table_free
 integration.finc, 407
fgsl_integration_qawo_table_set
 integration.finc, 407
fgsl_integration_qawo_table_set_length
 integration.finc, 407
fgsl_integration_qawo_table_status
 fgsl_well_defined, 268
 integration.finc, 407
fgsl_integration_qaws
 integration.finc, 408
fgsl_integration_qaws_table_alloc
 integration.finc, 408
fgsl_integration_qaws_table_free
 integration.finc, 408
fgsl_integration_qaws_table_set
 integration.finc, 408
fgsl_integration_qaws_table_status
 fgsl_well_defined, 268
 integration.finc, 408
fgsl_integration_qng
 integration.finc, 409
fgsl_integration_romberg
 integration.finc, 409
fgsl_integration_romberg_alloc
 integration.finc, 409
fgsl_integration_romberg_free
 integration.finc, 409
fgsl_integration_workspace_alloc
 integration.finc, 409
fgsl_integration_workspace_free
 integration.finc, 410
fgsl_integration_workspace_status
 fgsl_well_defined, 268
 integration.finc, 410
fgsl_interp2d_alloc
 interp.finc, 421
fgsl_interp2d_bicubic
 fgsl, 150
fgsl_interp2d_bilinear
 fgsl, 150
fgsl_interp2d_eval
 interp.finc, 422
fgsl_interp2d_eval_deriv_x
 interp.finc, 422
fgsl_interp2d_eval_deriv_x_e
 interp.finc, 422
fgsl_interp2d_eval_deriv_xx
 interp.finc, 422
fgsl_interp2d_eval_deriv_xx_e
 interp.finc, 423
fgsl_interp2d_eval_deriv_xy
 interp.finc, 423
fgsl_interp2d_eval_deriv_xy_e
 interp.finc, 423
fgsl_interp2d_eval_deriv_y
 interp.finc, 423
fgsl_interp2d_eval_deriv_y_e
 interp.finc, 424
fgsl_interp2d_eval_deriv_yy
 interp.finc, 424
fgsl_interp2d_eval_deriv_yy_e
 interp.finc, 424
fgsl_interp2d_eval_e
 interp.finc, 424
fgsl_interp2d_eval_e_extrap
 interp.finc, 425
fgsl_interp2d_eval_extrap
 interp.finc, 425
fgsl_interp2d_eval_extrap_e
 interp.finc, 425
fgsl_interp2d_free
 interp.finc, 425
fgsl_interp2d_init
 interp.finc, 426
fgsl_interp2d_min_size
 interp.finc, 426
fgsl_interp2d_name
 interp.finc, 426
fgsl_interp2d_status
 fgsl_well_defined, 268
 interp.finc, 426
fgsl_interp2d_type_min_size
 interp.finc, 426
fgsl_interp_accel_alloc
 interp.finc, 426
fgsl_interp_accel_find
 interp.finc, 427
fgsl_interp_accel_free
 interp.finc, 427
fgsl_interp_accel_status
 fgsl_well_defined, 268
 interp.finc, 427
fgsl_interp_akima
 fgsl, 151
fgsl_interp_akima_periodic
 fgsl, 151
fgsl_interp_alloc
 interp.finc, 427
fgsl_interp_bsearch
 interp.finc, 427
fgsl_interp_cspline
 fgsl, 151
fgsl_interp_cspline_periodic
 fgsl, 151
fgsl_interp_eval
 interp.finc, 427
fgsl_interp_eval_deriv

- interp.finc, [428](#)
- fgsl_interp_eval_deriv2
 - interp.finc, [428](#)
- fgsl_interp_eval_deriv2_e
 - interp.finc, [428](#)
- fgsl_interp_eval_deriv_e
 - interp.finc, [428](#)
- fgsl_interp_eval_e
 - interp.finc, [428](#)
- fgsl_interp_eval_integ
 - interp.finc, [429](#)
- fgsl_interp_eval_integ_e
 - interp.finc, [429](#)
- fgsl_interp_free
 - interp.finc, [429](#)
- fgsl_interp_init
 - interp.finc, [429](#)
- fgsl_interp_linear
 - fgsl, [151](#)
- fgsl_interp_min_size
 - interp.finc, [429](#)
- fgsl_interp_name
 - interp.finc, [430](#)
- fgsl_interp_polynomial
 - fgsl, [151](#)
- fgsl_interp_status
 - fgsl_well_defined, [268](#)
 - interp.finc, [430](#)
- fgsl_interp_steffen
 - fgsl, [151](#)
- fgsl_interp_type_min_size
 - interp.finc, [430](#)
- fgsl_isinf
 - math.finc, [537](#)
- fgsl_isnan
 - math.finc, [537](#)
- fgsl_ldexp
 - math.finc, [537](#)
- fgsl_linalg_balance_matrix
 - linalg.finc, [462](#)
- fgsl_linalg_bidiag_decomp
 - linalg.finc, [462](#)
- fgsl_linalg_bidiag_unpack
 - linalg.finc, [462](#)
- fgsl_linalg_bidiag_unpack2
 - linalg.finc, [462](#)
- fgsl_linalg_bidiag_unpack_b
 - linalg.finc, [463](#)
- fgsl_linalg_cholesky_band_decomp
 - linalg.finc, [463](#)
- fgsl_linalg_cholesky_band_invert
 - linalg.finc, [463](#)
- fgsl_linalg_cholesky_band_rcond
 - linalg.finc, [463](#)
- fgsl_linalg_cholesky_band_scale
 - linalg.finc, [463](#)
- fgsl_linalg_cholesky_band_scale_apply
 - linalg.finc, [463](#)
- fgsl_linalg_cholesky_band_solve
 - linalg.finc, [464](#)
- fgsl_linalg_cholesky_band_solvem
 - linalg.finc, [464](#)
- fgsl_linalg_cholesky_band_svx
 - linalg.finc, [464](#)
- fgsl_linalg_cholesky_band_svxm
 - linalg.finc, [464](#)
- fgsl_linalg_cholesky_band_unpack
 - linalg.finc, [464](#)
- fgsl_linalg_cholesky_decomp
 - linalg.finc, [464](#)
- fgsl_linalg_cholesky_decomp1
 - linalg.finc, [465](#)
- fgsl_linalg_cholesky_decomp2
 - linalg.finc, [465](#)
- fgsl_linalg_cholesky_invert
 - linalg.finc, [465](#)
- fgsl_linalg_cholesky_rcond
 - linalg.finc, [465](#)
- fgsl_linalg_cholesky_scale
 - linalg.finc, [465](#)
- fgsl_linalg_cholesky_scale_apply
 - linalg.finc, [465](#)
- fgsl_linalg_cholesky_solve
 - linalg.finc, [466](#)
- fgsl_linalg_cholesky_solve2
 - linalg.finc, [466](#)
- fgsl_linalg_cholesky_svx
 - linalg.finc, [466](#)
- fgsl_linalg_cholesky_svx2
 - linalg.finc, [466](#)
- fgsl_linalg_cod_decomp
 - linalg.finc, [466](#)
- fgsl_linalg_cod_decomp_e
 - linalg.finc, [467](#)
- fgsl_linalg_cod_issolve
 - linalg.finc, [467](#)
- fgsl_linalg_cod_issolve2
 - linalg.finc, [467](#)
- fgsl_linalg_cod_matz
 - linalg.finc, [467](#)
- fgsl_linalg_cod_unpack
 - linalg.finc, [468](#)
- fgsl_linalg_complex_cholesky_decomp
 - linalg.finc, [468](#)
- fgsl_linalg_complex_cholesky_invert
 - linalg.finc, [468](#)
- fgsl_linalg_complex_cholesky_solve
 - linalg.finc, [468](#)
- fgsl_linalg_complex_cholesky_svx
 - linalg.finc, [468](#)
- fgsl_linalg_complex_householder_hm
 - linalg.finc, [469](#)
- fgsl_linalg_complex_householder_hv
 - linalg.finc, [469](#)
- fgsl_linalg_complex_householder_mh
 - linalg.finc, [469](#)

- fgsl_linalg_complex_householder_transform
linalg.finc, [469](#)
- fgsl_linalg_complex_lu_decomp
linalg.finc, [469](#)
- fgsl_linalg_complex_lu_det
linalg.finc, [469](#)
- fgsl_linalg_complex_lu_invert
linalg.finc, [470](#)
- fgsl_linalg_complex_lu_invx
linalg.finc, [470](#)
- fgsl_linalg_complex_lu_lndet
linalg.finc, [470](#)
- fgsl_linalg_complex_lu_refine
linalg.finc, [470](#)
- fgsl_linalg_complex_lu_sgndet
linalg.finc, [470](#)
- fgsl_linalg_complex_lu_solve
linalg.finc, [470](#)
- fgsl_linalg_complex_lu_svx
linalg.finc, [471](#)
- fgsl_linalg_complex_qr_decomp
linalg.finc, [471](#)
- fgsl_linalg_complex_qr_decomp_r
linalg.finc, [471](#)
- fgsl_linalg_complex_qr_issolve
linalg.finc, [471](#)
- fgsl_linalg_complex_qr_issolve_r
linalg.finc, [471](#)
- fgsl_linalg_complex_qr_qhvec
linalg.finc, [472](#)
- fgsl_linalg_complex_qr_qhvec_r
linalg.finc, [472](#)
- fgsl_linalg_complex_qr_qvec
linalg.finc, [472](#)
- fgsl_linalg_complex_qr_solve
linalg.finc, [472](#)
- fgsl_linalg_complex_qr_solve_r
linalg.finc, [472](#)
- fgsl_linalg_complex_qr_svx
linalg.finc, [473](#)
- fgsl_linalg_complex_qr_unpack_r
linalg.finc, [473](#)
- fgsl_linalg_complex_tri_invert
linalg.finc, [473](#)
- fgsl_linalg_complex_tri_lhl
linalg.finc, [473](#)
- fgsl_linalg_complex_tri_ul
linalg.finc, [473](#)
- fgsl_linalg_givens
linalg.finc, [473](#)
- fgsl_linalg_givens_gv
linalg.finc, [474](#)
- fgsl_linalg_hermt_dcomp
linalg.finc, [474](#)
- fgsl_linalg_hermt_dunpack
linalg.finc, [474](#)
- fgsl_linalg_hermt_dunpack_t
linalg.finc, [474](#)
- fgsl_linalg_hessenberg_decomp
linalg.finc, [474](#)
- fgsl_linalg_hessenberg_set_zero
linalg.finc, [475](#)
- fgsl_linalg_hessenberg_unpack
linalg.finc, [475](#)
- fgsl_linalg_hessenberg_unpack_accum
linalg.finc, [475](#)
- fgsl_linalg_hesstri_decomp
linalg.finc, [475](#)
- fgsl_linalg_hh_solve
linalg.finc, [475](#)
- fgsl_linalg_hh_svx
linalg.finc, [475](#)
- fgsl_linalg_householder_hm
linalg.finc, [476](#)
- fgsl_linalg_householder_hv
linalg.finc, [476](#)
- fgsl_linalg_householder_mh
linalg.finc, [476](#)
- fgsl_linalg_householder_transform
linalg.finc, [476](#)
- fgsl_linalg_ldlt_band_decomp
linalg.finc, [476](#)
- fgsl_linalg_ldlt_band_rcond
linalg.finc, [476](#)
- fgsl_linalg_ldlt_band_solve
linalg.finc, [477](#)
- fgsl_linalg_ldlt_band_svx
linalg.finc, [477](#)
- fgsl_linalg_ldlt_band_unpack
linalg.finc, [477](#)
- fgsl_linalg_ldlt_decomp
linalg.finc, [477](#)
- fgsl_linalg_ldlt_rcond
linalg.finc, [477](#)
- fgsl_linalg_ldlt_solve
linalg.finc, [477](#)
- fgsl_linalg_ldlt_svx
linalg.finc, [478](#)
- fgsl_linalg_lq_decomp
linalg.finc, [478](#)
- fgsl_linalg_lq_issolve
linalg.finc, [478](#)
- fgsl_linalg_lq_qtvec
linalg.finc, [478](#)
- fgsl_linalg_lq_unpack
linalg.finc, [478](#)
- fgsl_linalg_lu_decomp
linalg.finc, [479](#)
- fgsl_linalg_lu_det
linalg.finc, [479](#)
- fgsl_linalg_lu_invert
linalg.finc, [479](#)
- fgsl_linalg_lu_invx
linalg.finc, [479](#)
- fgsl_linalg_lu_lndet
linalg.finc, [479](#)

`fgsl_linalg_lu_refine`
 `linalg.finc`, 479

`fgsl_linalg_lu_sgndet`
 `linalg.finc`, 480

`fgsl_linalg_lu_solve`
 `linalg.finc`, 480

`fgsl_linalg_lu_svx`
 `linalg.finc`, 480

`fgsl_linalg_mcholesky_decomp`
 `linalg.finc`, 480

`fgsl_linalg_mcholesky_invert`
 `linalg.finc`, 480

`fgsl_linalg_mcholesky_rcond`
 `linalg.finc`, 481

`fgsl_linalg_mcholesky_solve`
 `linalg.finc`, 481

`fgsl_linalg_mcholesky_svx`
 `linalg.finc`, 481

`fgsl_linalg_pcholesky_decomp`
 `linalg.finc`, 481

`fgsl_linalg_pcholesky_decomp2`
 `linalg.finc`, 481

`fgsl_linalg_pcholesky_invert`
 `linalg.finc`, 482

`fgsl_linalg_pcholesky_rcond`
 `linalg.finc`, 482

`fgsl_linalg_pcholesky_solve`
 `linalg.finc`, 482

`fgsl_linalg_pcholesky_solve2`
 `linalg.finc`, 482

`fgsl_linalg_pcholesky_svx`
 `linalg.finc`, 482

`fgsl_linalg_pcholesky_svx2`
 `linalg.finc`, 483

`fgsl_linalg_ql_decomp`
 `linalg.finc`, 483

`fgsl_linalg_ql_unpack`
 `linalg.finc`, 483

`fgsl_linalg_qr_decomp`
 `linalg.finc`, 483

`fgsl_linalg_qr_decomp_r`
 `linalg.finc`, 483

`fgsl_linalg_qr_issolve`
 `linalg.finc`, 483

`fgsl_linalg_qr_issolve_r`
 `linalg.finc`, 484

`fgsl_linalg_qr_matq`
 `linalg.finc`, 484

`fgsl_linalg_qr_qrsolve`
 `linalg.finc`, 484

`fgsl_linalg_qr_qtmat`
 `linalg.finc`, 484

`fgsl_linalg_qr_qtmat_r`
 `linalg.finc`, 484

`fgsl_linalg_qr_qtvec`
 `linalg.finc`, 485

`fgsl_linalg_qr_qtvec_r`
 `linalg.finc`, 485

`fgsl_linalg_qr_qvec`
 `linalg.finc`, 485

`fgsl_linalg_qr_resolve`
 `linalg.finc`, 485

`fgsl_linalg_qr_rsvx`
 `linalg.finc`, 485

`fgsl_linalg_qr_solve`
 `linalg.finc`, 486

`fgsl_linalg_qr_solve_r`
 `linalg.finc`, 486

`fgsl_linalg_qr_svx`
 `linalg.finc`, 486

`fgsl_linalg_qr_ud_decomp`
 `linalg.finc`, 486

`fgsl_linalg_qr_ud_issolve`
 `linalg.finc`, 486

`fgsl_linalg_qr_unpack`
 `linalg.finc`, 487

`fgsl_linalg_qr_unpack_r`
 `linalg.finc`, 487

`fgsl_linalg_qr_update`
 `linalg.finc`, 487

`fgsl_linalg_qr_ur_decomp`
 `linalg.finc`, 487

`fgsl_linalg_qr_uu_decomp`
 `linalg.finc`, 487

`fgsl_linalg_qr_uu_issolve`
 `linalg.finc`, 488

`fgsl_linalg_qr_uu_qtvec`
 `linalg.finc`, 488

`fgsl_linalg_qr_uz_decomp`
 `linalg.finc`, 488

`fgsl_linalg_qrpt_decomp`
 `linalg.finc`, 488

`fgsl_linalg_qrpt_decomp2`
 `linalg.finc`, 488

`fgsl_linalg_qrpt_issolve`
 `linalg.finc`, 489

`fgsl_linalg_qrpt_issolve2`
 `linalg.finc`, 489

`fgsl_linalg_qrpt_qrsolve`
 `linalg.finc`, 489

`fgsl_linalg_qrpt_rank`
 `linalg.finc`, 489

`fgsl_linalg_qrpt_rcond`
 `linalg.finc`, 490

`fgsl_linalg_qrpt_resolve`
 `linalg.finc`, 490

`fgsl_linalg_qrpt_rsvx`
 `linalg.finc`, 490

`fgsl_linalg_qrpt_solve`
 `linalg.finc`, 490

`fgsl_linalg_qrpt_svx`
 `linalg.finc`, 490

`fgsl_linalg_qrpt_update`
 `linalg.finc`, 491

`fgsl_linalg_r_solve`
 `linalg.finc`, 491

- fgsl_linalg_r_svx
 - linalg.finc, [491](#)
- fgsl_linalg_solve_cyc_tridiag
 - linalg.finc, [491](#)
- fgsl_linalg_solve_symm_cyc_tridiag
 - linalg.finc, [491](#)
- fgsl_linalg_solve_symm_tridiag
 - linalg.finc, [492](#)
- fgsl_linalg_solve_tridiag
 - linalg.finc, [492](#)
- fgsl_linalg_sv_decomp
 - linalg.finc, [492](#)
- fgsl_linalg_sv_decomp_jacobi
 - linalg.finc, [492](#)
- fgsl_linalg_sv_decomp_mod
 - linalg.finc, [492](#)
- fgsl_linalg_sv_leverage
 - linalg.finc, [493](#)
- fgsl_linalg_sv_solve
 - linalg.finc, [493](#)
- fgsl_linalg_symmtd_decomp
 - linalg.finc, [493](#)
- fgsl_linalg_symmtd_unpack
 - linalg.finc, [493](#)
- fgsl_linalg_symmtd_unpack_t
 - linalg.finc, [493](#)
- fgsl_linalg_tri_invert
 - linalg.finc, [494](#)
- fgsl_linalg_tri_lower_invert
 - linalg.finc, [494](#)
- fgsl_linalg_tri_lower_rcond
 - linalg.finc, [494](#)
- fgsl_linalg_tri_lower_unit_invert
 - linalg.finc, [494](#)
- fgsl_linalg_tri_ltl
 - linalg.finc, [494](#)
- fgsl_linalg_tri_rcond
 - linalg.finc, [494](#)
- fgsl_linalg_tri_ul
 - linalg.finc, [495](#)
- fgsl_linalg_tri_upper_invert
 - linalg.finc, [495](#)
- fgsl_linalg_tri_upper_rcond
 - linalg.finc, [495](#)
- fgsl_linalg_tri_upper_unit_invert
 - linalg.finc, [495](#)
- fgsl_log1p
 - math.finc, [537](#)
- fgsl_long
 - fgsl, [151](#)
- fgsl_matrix_align, [203](#)
 - array.finc, [279](#)
 - fgsl_matrix_align, [203](#)
 - fgsl_matrix_complex_align, [204](#)
 - fgsl_matrix_complex_pointer_align, [204](#)
 - fgsl_matrix_pointer_align, [204](#)
- fgsl_matrix_c_ptr
 - array.finc, [280](#)
- fgsl_obj_c_ptr, [232](#)
- fgsl_matrix_complex_align
 - array.finc, [280](#)
- fgsl_matrix_align, [204](#)
- fgsl_matrix_complex_c_ptr
 - array.finc, [281](#)
- fgsl_matrix_complex_free
 - array.finc, [281](#)
- fgsl_matrix_free, [205](#)
- fgsl_matrix_complex_init
 - array.finc, [281](#)
- fgsl_matrix_init, [206](#)
- fgsl_matrix_complex_init_legacy
 - array.finc, [281](#)
- fgsl_matrix_init, [206](#)
- fgsl_matrix_complex_pointer_align
 - array.finc, [282](#)
- fgsl_matrix_align, [204](#)
- fgsl_matrix_complex_status
 - array.finc, [282](#)
- fgsl_well_defined, [268](#)
- fgsl_matrix_complex_to_array
 - array.finc, [282](#)
- assignment(=), [181](#)
- fgsl_matrix_complex_to_fptr
 - array.finc, [283](#)
- fgsl_matrix_to_fptr, [206](#)
- fgsl_matrix_free, [205](#)
 - array.finc, [283](#)
- fgsl_matrix_complex_free, [205](#)
- fgsl_matrix_free, [205](#)
- fgsl_matrix_get_size1
 - array.finc, [283](#)
- fgsl_matrix_get_size2
 - array.finc, [283](#)
- fgsl_matrix_get_tda
 - array.finc, [283](#)
- fgsl_matrix_init, [205](#)
 - array.finc, [283](#)
- fgsl_matrix_complex_init, [206](#)
- fgsl_matrix_complex_init_legacy, [206](#)
- fgsl_matrix_init, [205](#)
- fgsl_matrix_init_legacy, [206](#)
- fgsl_matrix_init_legacy
 - array.finc, [284](#)
- fgsl_matrix_init, [206](#)
- fgsl_matrix_pointer_align
 - array.finc, [284](#)
- fgsl_matrix_align, [204](#)
- fgsl_matrix_status
 - array.finc, [285](#)
- fgsl_well_defined, [269](#)
- fgsl_matrix_to_array
 - array.finc, [285](#)
- assignment(=), [181](#)
- fgsl_matrix_to_fptr, [206](#)
 - array.finc, [285](#)
- fgsl_matrix_complex_to_fptr, [206](#)

- fgsl_matrix_to_fptr, 206
- fgsl_min_fminimizer_alloc
 - min.finc, 542
- fgsl_min_fminimizer_brent
 - fgsl, 152
- fgsl_min_fminimizer_f_lower
 - min.finc, 543
- fgsl_min_fminimizer_f_minimum
 - min.finc, 543
- fgsl_min_fminimizer_f_upper
 - min.finc, 543
- fgsl_min_fminimizer_free
 - min.finc, 543
- fgsl_min_fminimizer_goldensection
 - fgsl, 152
- fgsl_min_fminimizer_iterate
 - min.finc, 543
- fgsl_min_fminimizer_name
 - min.finc, 543
- fgsl_min_fminimizer_quad_golden
 - fgsl, 152
- fgsl_min_fminimizer_set
 - min.finc, 543
- fgsl_min_fminimizer_set_with_values
 - min.finc, 544
- fgsl_min_fminimizer_status
 - fgsl_well_defined, 269
 - min.finc, 544
- fgsl_min_fminimizer_x_lower
 - min.finc, 544
- fgsl_min_fminimizer_x_minimum
 - min.finc, 544
- fgsl_min_fminimizer_x_upper
 - min.finc, 544
- fgsl_min_test_interval
 - min.finc, 544
- fgsl_monte_function_cfree
 - montecarlo.finc, 557
- fgsl_monte_function_cinit
 - montecarlo.finc, 558
- fgsl_monte_function_free
 - montecarlo.finc, 552
- fgsl_monte_function_init
 - montecarlo.finc, 552
- fgsl_monte_function_status
 - fgsl_well_defined, 269
 - montecarlo.finc, 552
- fgsl_monte_miser_alloc
 - montecarlo.finc, 552
- fgsl_monte_miser_cgetparams
 - montecarlo.finc, 558
- fgsl_monte_miser_csetparams
 - montecarlo.finc, 558
- fgsl_monte_miser_free
 - montecarlo.finc, 552
- fgsl_monte_miser_getparams
 - montecarlo.finc, 552
- fgsl_monte_miser_init
 - montecarlo.finc, 553
- fgsl_monte_miser_integrate
 - montecarlo.finc, 553
- fgsl_monte_miser_setparams
 - montecarlo.finc, 553
- fgsl_monte_miser_status
 - fgsl_well_defined, 269
 - montecarlo.finc, 553
- fgsl_monte_plain_alloc
 - montecarlo.finc, 554
- fgsl_monte_plain_free
 - montecarlo.finc, 554
- fgsl_monte_plain_init
 - montecarlo.finc, 554
- fgsl_monte_plain_integrate
 - montecarlo.finc, 554
- fgsl_monte_plain_status
 - fgsl_well_defined, 269
 - montecarlo.finc, 554
- fgsl_monte_vegas_alloc
 - montecarlo.finc, 554
- fgsl_monte_vegas_cgetparams
 - montecarlo.finc, 558
- fgsl_monte_vegas_chisq
 - montecarlo.finc, 555
- fgsl_monte_vegas_csetparams
 - montecarlo.finc, 558
- fgsl_monte_vegas_free
 - montecarlo.finc, 555
- fgsl_monte_vegas_getparams
 - montecarlo.finc, 555
- fgsl_monte_vegas_init
 - montecarlo.finc, 555
- fgsl_monte_vegas_integrate
 - montecarlo.finc, 555
- fgsl_monte_vegas_runval
 - montecarlo.finc, 556
- fgsl_monte_vegas_setparams
 - montecarlo.finc, 556
- fgsl_monte_vegas_status
 - fgsl_well_defined, 269
 - montecarlo.finc, 556
- fgsl_movstat_alloc
 - movstat.finc, 562
- fgsl_movstat_alloc2
 - movstat.finc, 562
- fgsl_movstat_apply
 - movstat.finc, 562
- fgsl_movstat_end_padvalue
 - fgsl, 152
- fgsl_movstat_end_padzero
 - fgsl, 152
- fgsl_movstat_end_truncate
 - fgsl, 152
- fgsl_movstat_fill
 - movstat.finc, 562
- fgsl_movstat_free
 - movstat.finc, 562

fgsl_movstat_mad
 movstat.finc, [562](#)

fgsl_movstat_mad0
 movstat.finc, [563](#)

fgsl_movstat_max
 movstat.finc, [563](#)

fgsl_movstat_mean
 movstat.finc, [563](#)

fgsl_movstat_median
 movstat.finc, [563](#)

fgsl_movstat_min
 movstat.finc, [563](#)

fgsl_movstat_minmax
 movstat.finc, [564](#)

fgsl_movstat_qn
 movstat.finc, [564](#)

fgsl_movstat_qqr
 movstat.finc, [564](#)

fgsl_movstat_sd
 movstat.finc, [564](#)

fgsl_movstat_sn
 movstat.finc, [564](#)

fgsl_movstat_sum
 movstat.finc, [565](#)

fgsl_movstat_variance
 movstat.finc, [565](#)

fgsl_multifit_covar
 multifit.finc, [571](#)

fgsl_multifit_covar_qrpt
 multifit.finc, [572](#)

fgsl_multifit_eval_wdf, [211](#)
 fgsl_multifit_eval_wdf_nowts, [211](#)
 fgsl_multifit_eval_wdf_wts, [211](#)

fgsl_multifit_eval_wdf_nowts
 fgsl_multifit_eval_wdf, [211](#)
 multifit.finc, [572](#)

fgsl_multifit_eval_wdf_wts
 fgsl_multifit_eval_wdf, [211](#)
 multifit.finc, [572](#)

fgsl_multifit_eval_wf, [211](#)
 fgsl_multifit_eval_wf_nowts, [212](#)
 fgsl_multifit_eval_wf_wts, [212](#)

fgsl_multifit_eval_wf_nowts
 fgsl_multifit_eval_wf, [212](#)
 multifit.finc, [572](#)

fgsl_multifit_eval_wf_wts
 fgsl_multifit_eval_wf, [212](#)
 multifit.finc, [572](#)

fgsl_multifit_fdfridge_alloc
 multifit.finc, [573](#)

fgsl_multifit_fdfridge_driver
 multifit.finc, [573](#)

fgsl_multifit_fdfridge_free
 multifit.finc, [573](#)

fgsl_multifit_fdfridge_iterate
 multifit.finc, [573](#)

fgsl_multifit_fdfridge_name
 multifit.finc, [573](#)

fgsl_multifit_fdfridge_niter
 multifit.finc, [573](#)

fgsl_multifit_fdfridge_position
 multifit.finc, [574](#)

fgsl_multifit_fdfridge_residual
 multifit.finc, [574](#)

fgsl_multifit_fdfridge_set
 multifit.finc, [574](#)

fgsl_multifit_fdfridge_set2
 multifit.finc, [574](#)

fgsl_multifit_fdfridge_set3
 multifit.finc, [574](#)

fgsl_multifit_fdfridge_wset
 multifit.finc, [574](#)

fgsl_multifit_fdfridge_wset2
 multifit.finc, [575](#)

fgsl_multifit_fdfridge_wset3
 multifit.finc, [575](#)

fgsl_multifit_fdfsolver_alloc
 multifit.finc, [575](#)

fgsl_multifit_fdfsolver_dif_df, [213](#)
 fgsl_multifit_fdfsolver_dif_df_nowts, [213](#)
 fgsl_multifit_fdfsolver_dif_df_wts, [213](#)

fgsl_multifit_fdfsolver_dif_df_nowts
 fgsl_multifit_fdfsolver_dif_df, [213](#)
 multifit.finc, [575](#)

fgsl_multifit_fdfsolver_dif_df_wts
 fgsl_multifit_fdfsolver_dif_df, [213](#)
 multifit.finc, [575](#)

fgsl_multifit_fdfsolver_driver
 multifit.finc, [576](#)

fgsl_multifit_fdfsolver_dx
 multifit.finc, [576](#)

fgsl_multifit_fdfsolver_f
 multifit.finc, [576](#)

fgsl_multifit_fdfsolver_free
 multifit.finc, [576](#)

fgsl_multifit_fdfsolver_iterate
 multifit.finc, [576](#)

fgsl_multifit_fdfsolver_jac
 multifit.finc, [576](#)

fgsl_multifit_fdfsolver_lnder
 fgsl, [152](#)

fgsl_multifit_fdfsolver_lmniel
 fgsl, [153](#)

fgsl_multifit_fdfsolver_lmsder
 fgsl, [153](#)

fgsl_multifit_fdfsolver_name
 multifit.finc, [577](#)

fgsl_multifit_fdfsolver_niter
 multifit.finc, [577](#)

fgsl_multifit_fdfsolver_position
 multifit.finc, [577](#)

fgsl_multifit_fdfsolver_residual
 multifit.finc, [577](#)

fgsl_multifit_fdfsolver_set
 multifit.finc, [577](#)

fgsl_multifit_fdfsolver_status

- fgsl_well_defined, 269
- multifit.finc, 577
- fgsl_multifit_fdfsolver_test
 - multifit.finc, 578
- fgsl_multifit_fdfsolver_wset
 - multifit.finc, 578
- fgsl_multifit_fsolver_alloc
 - multifit.finc, 578
- fgsl_multifit_fsolver_driver
 - multifit.finc, 578
- fgsl_multifit_fsolver_free
 - multifit.finc, 578
- fgsl_multifit_fsolver_iterate
 - multifit.finc, 579
- fgsl_multifit_fsolver_name
 - multifit.finc, 579
- fgsl_multifit_fsolver_position
 - multifit.finc, 579
- fgsl_multifit_fsolver_set
 - multifit.finc, 579
- fgsl_multifit_fsolver_status
 - fgsl_well_defined, 269
 - multifit.finc, 579
- fgsl_multifit_function_cfree
 - multifit.finc, 593
- fgsl_multifit_function_cinit
 - multifit.finc, 593
- fgsl_multifit_function_fdf_cfree
 - multifit.finc, 593
- fgsl_multifit_function_fdf_cinit
 - multifit.finc, 594
- fgsl_multifit_function_fdf_free
 - multifit.finc, 579
- fgsl_multifit_function_fdf_init
 - multifit.finc, 579
- fgsl_multifit_function_free
 - multifit.finc, 580
- fgsl_multifit_function_init
 - multifit.finc, 580
- fgsl_multifit_gradient
 - multifit.finc, 580
- fgsl_multifit_linear
 - multifit.finc, 580
- fgsl_multifit_linear_alloc
 - multifit.finc, 580
- fgsl_multifit_linear_applyw
 - multifit.finc, 581
- fgsl_multifit_linear_bsvd
 - multifit.finc, 581
- fgsl_multifit_linear_est
 - multifit.finc, 581
- fgsl_multifit_linear_free
 - multifit.finc, 581
- fgsl_multifit_linear_gcv
 - multifit.finc, 581
- fgsl_multifit_linear_gcv_calc
 - multifit.finc, 582
- fgsl_multifit_linear_gcv_curve
 - multifit.finc, 582
- fgsl_multifit_linear_gcv_init
 - multifit.finc, 582
- fgsl_multifit_linear_gcv_min
 - multifit.finc, 582
- fgsl_multifit_linear_genform1
 - multifit.finc, 582
- fgsl_multifit_linear_genform2
 - multifit.finc, 583
- fgsl_multifit_linear_l_decomp
 - multifit.finc, 583
- fgsl_multifit_linear_lcorner
 - multifit.finc, 583
- fgsl_multifit_linear_lcorner2
 - multifit.finc, 583
- fgsl_multifit_linear_lcurvature
 - multifit.finc, 583
- fgsl_multifit_linear_lcurve
 - multifit.finc, 584
- fgsl_multifit_linear_lk
 - multifit.finc, 584
- fgsl_multifit_linear_lreg
 - multifit.finc, 584
- fgsl_multifit_linear_lsobolev
 - multifit.finc, 584
- fgsl_multifit_linear_rank
 - multifit.finc, 584
- fgsl_multifit_linear_rcond
 - multifit.finc, 585
- fgsl_multifit_linear_residuals
 - multifit.finc, 585
- fgsl_multifit_linear_solve
 - multifit.finc, 585
- fgsl_multifit_linear_stdform1
 - multifit.finc, 585
- fgsl_multifit_linear_stdform2
 - multifit.finc, 585
- fgsl_multifit_linear_svd
 - multifit.finc, 586
- fgsl_multifit_linear_tsvd
 - multifit.finc, 586
- fgsl_multifit_linear_wgenform2
 - multifit.finc, 586
- fgsl_multifit_linear_wstdform1
 - multifit.finc, 586
- fgsl_multifit_linear_wstdform2
 - multifit.finc, 587
- fgsl_multifit_nlinear_alloc
 - nlfit.finc, 639
- fgsl_multifit_nlinear_covar
 - nlfit.finc, 639
- fgsl_multifit_nlinear_ctrdiff
 - fgsl, 153
- fgsl_multifit_nlinear_default_parameters
 - nlfit.finc, 639
- fgsl_multifit_nlinear_driver
 - nlfit.finc, 639
- fgsl_multifit_nlinear_fdf_cfree

- [nlfit.finc](#), 648
- [fgsl_multifit_nlinear_fdf_cinit](#)
 - [nlfit.finc](#), 648
- [fgsl_multifit_nlinear_fdf_free](#)
 - [nlfit.finc](#), 640
- [fgsl_multifit_nlinear_fdf_get](#)
 - [nlfit.finc](#), 640
- [fgsl_multifit_nlinear_fdf_init](#)
 - [nlfit.finc](#), 640
- [fgsl_multifit_nlinear_free](#)
 - [nlfit.finc](#), 640
- [fgsl_multifit_nlinear_fwddiff](#)
 - [fgsl](#), 153
- [fgsl_multifit_nlinear_init](#)
 - [nlfit.finc](#), 641
- [fgsl_multifit_nlinear_iterate](#)
 - [nlfit.finc](#), 641
- [fgsl_multifit_nlinear_jac](#)
 - [nlfit.finc](#), 641
- [fgsl_multifit_nlinear_name](#)
 - [nlfit.finc](#), 641
- [fgsl_multifit_nlinear_niter](#)
 - [nlfit.finc](#), 641
- [fgsl_multifit_nlinear_parameters_set](#)
 - [nlfit.finc](#), 641
- [fgsl_multifit_nlinear_position](#)
 - [nlfit.finc](#), 642
- [fgsl_multifit_nlinear_rcond](#)
 - [nlfit.finc](#), 642
- [fgsl_multifit_nlinear_residual](#)
 - [nlfit.finc](#), 642
- [fgsl_multifit_nlinear_scale_levenberg](#)
 - [fgsl](#), 153
- [fgsl_multifit_nlinear_scale_marquardt](#)
 - [fgsl](#), 153
- [fgsl_multifit_nlinear_scale_more](#)
 - [fgsl](#), 153
- [fgsl_multifit_nlinear_setup](#)
 - [fgsl_multifit_nlinear_type](#), 217
 - [nlfit.finc](#), 642
- [fgsl_multifit_nlinear_solver_cholesky](#)
 - [fgsl](#), 154
- [fgsl_multifit_nlinear_solver_qr](#)
 - [fgsl](#), 154
- [fgsl_multifit_nlinear_solver_svd](#)
 - [fgsl](#), 154
- [fgsl_multifit_nlinear_status](#)
 - [fgsl_well_defined](#), 270
 - [nlfit.finc](#), 642
- [fgsl_multifit_nlinear_test](#)
 - [nlfit.finc](#), 642
- [fgsl_multifit_nlinear_trs_ddogleg](#)
 - [fgsl](#), 154
- [fgsl_multifit_nlinear_trs_dogleg](#)
 - [fgsl](#), 154
- [fgsl_multifit_nlinear_trs_lm](#)
 - [fgsl](#), 154
- [fgsl_multifit_nlinear_trs_lmaccel](#)
 - [fgsl](#), 154
- [fgsl_multifit_nlinear_trs_name](#)
 - [nlfit.finc](#), 643
- [fgsl_multifit_nlinear_trs_subspace2d](#)
 - [fgsl](#), 155
- [fgsl_multifit_nlinear_type](#), 217
 - [fgsl_multifit_nlinear_setup](#), 217
- [fgsl_multifit_nlinear_winit](#)
 - [nlfit.finc](#), 643
- [fgsl_multifit_robust](#)
 - [multifit.finc](#), 587
- [fgsl_multifit_robust_alloc](#)
 - [multifit.finc](#), 587
- [fgsl_multifit_robust_bisquare](#)
 - [fgsl](#), 155
- [fgsl_multifit_robust_cauchy](#)
 - [fgsl](#), 155
- [fgsl_multifit_robust_default](#)
 - [fgsl](#), 155
- [fgsl_multifit_robust_est](#)
 - [multifit.finc](#), 587
- [fgsl_multifit_robust_fair](#)
 - [fgsl](#), 155
- [fgsl_multifit_robust_free](#)
 - [multifit.finc](#), 588
- [fgsl_multifit_robust_huber](#)
 - [fgsl](#), 155
- [fgsl_multifit_robust_maxiter](#)
 - [multifit.finc](#), 588
- [fgsl_multifit_robust_name](#)
 - [multifit.finc](#), 588
- [fgsl_multifit_robust_ols](#)
 - [fgsl](#), 155
- [fgsl_multifit_robust_residuals](#)
 - [multifit.finc](#), 588
- [fgsl_multifit_robust_statistics](#)
 - [multifit.finc](#), 588
- [fgsl_multifit_robust_tune](#)
 - [multifit.finc](#), 588
- [fgsl_multifit_robust_weights](#)
 - [multifit.finc](#), 589
- [fgsl_multifit_robust_welsch](#)
 - [fgsl](#), 156
- [fgsl_multifit_status](#)
 - [fgsl_well_defined](#), 270
 - [multifit.finc](#), 589
- [fgsl_multifit_test_delta](#)
 - [multifit.finc](#), 589
- [fgsl_multifit_test_gradient](#)
 - [multifit.finc](#), 589
- [fgsl_multifit_wlinear](#)
 - [multifit.finc](#), 589
- [fgsl_multifit_wlinear_svd](#)
 - [multifit.finc](#), 589
- [fgsl_multifit_wlinear_tsvd](#)
 - [multifit.finc](#), 590
- [fgsl_multifit_wlinear_usvd](#)
 - [multifit.finc](#), 590

fgsl_multilarge_linear_accumulate
 multilarge.finc, [612](#)
 fgsl_multilarge_linear_alloc
 multilarge.finc, [612](#)
 fgsl_multilarge_linear_free
 multilarge.finc, [612](#)
 fgsl_multilarge_linear_genform1
 multilarge.finc, [612](#)
 fgsl_multilarge_linear_genform2
 multilarge.finc, [612](#)
 fgsl_multilarge_linear_l_decomp
 multilarge.finc, [612](#)
 fgsl_multilarge_linear_lcurve
 multilarge.finc, [613](#)
 fgsl_multilarge_linear_matrix_ptr
 multilarge.finc, [613](#)
 fgsl_multilarge_linear_name
 multilarge.finc, [613](#)
 fgsl_multilarge_linear_normal
 fgsl, [156](#)
 fgsl_multilarge_linear_rcond
 multilarge.finc, [613](#)
 fgsl_multilarge_linear_reset
 multilarge.finc, [613](#)
 fgsl_multilarge_linear_rhs_ptr
 multilarge.finc, [613](#)
 fgsl_multilarge_linear_solve
 multilarge.finc, [614](#)
 fgsl_multilarge_linear_stdform1
 multilarge.finc, [614](#)
 fgsl_multilarge_linear_stdform2
 multilarge.finc, [614](#)
 fgsl_multilarge_linear_tsqr
 fgsl, [156](#)
 fgsl_multilarge_linear_wstdform1
 multilarge.finc, [614](#)
 fgsl_multilarge_linear_wstdform2
 multilarge.finc, [614](#)
 fgsl_multilarge_nlinear_alloc
 nlfite.finc, [643](#)
 fgsl_multilarge_nlinear_covar
 nlfite.finc, [643](#)
 fgsl_multilarge_nlinear_default_parameters
 nlfite.finc, [643](#)
 fgsl_multilarge_nlinear_driver
 nlfite.finc, [643](#)
 fgsl_multilarge_nlinear_fdf_cfree
 nlfite.finc, [648](#)
 fgsl_multilarge_nlinear_fdf_cinit
 nlfite.finc, [649](#)
 fgsl_multilarge_nlinear_fdf_free
 nlfite.finc, [644](#)
 fgsl_multilarge_nlinear_fdf_get
 nlfite.finc, [644](#)
 fgsl_multilarge_nlinear_fdf_init
 nlfite.finc, [644](#)
 fgsl_multilarge_nlinear_free
 nlfite.finc, [644](#)
 fgsl_multilarge_nlinear_init
 nlfite.finc, [645](#)
 fgsl_multilarge_nlinear_iterate
 nlfite.finc, [645](#)
 fgsl_multilarge_nlinear_name
 nlfite.finc, [645](#)
 fgsl_multilarge_nlinear_niter
 nlfite.finc, [645](#)
 fgsl_multilarge_nlinear_parameters_set
 nlfite.finc, [645](#)
 fgsl_multilarge_nlinear_position
 nlfite.finc, [645](#)
 fgsl_multilarge_nlinear_rcond
 nlfite.finc, [646](#)
 fgsl_multilarge_nlinear_residual
 nlfite.finc, [646](#)
 fgsl_multilarge_nlinear_scale_levenberg
 fgsl, [156](#)
 fgsl_multilarge_nlinear_scale_marquardt
 fgsl, [156](#)
 fgsl_multilarge_nlinear_scale_more
 fgsl, [156](#)
 fgsl_multilarge_nlinear_setup
 fgsl_multilarge_nlinear_type, [224](#)
 nlfite.finc, [646](#)
 fgsl_multilarge_nlinear_solver_cholesky
 fgsl, [156](#)
 fgsl_multilarge_nlinear_test
 nlfite.finc, [646](#)
 fgsl_multilarge_nlinear_trs_cgst
 fgsl, [157](#)
 fgsl_multilarge_nlinear_trs_ddogleg
 fgsl, [157](#)
 fgsl_multilarge_nlinear_trs_dogleg
 fgsl, [157](#)
 fgsl_multilarge_nlinear_trs_lm
 fgsl, [157](#)
 fgsl_multilarge_nlinear_trs_lmaccel
 fgsl, [157](#)
 fgsl_multilarge_nlinear_trs_name
 nlfite.finc, [646](#)
 fgsl_multilarge_nlinear_trs_subspace2d
 fgsl, [157](#)
 fgsl_multilarge_nlinear_type, [224](#)
 fgsl_multilarge_nlinear_setup, [224](#)
 fgsl_multilarge_nlinear_winit
 nlfite.finc, [646](#)
 fgsl_multimin_fdfminimizer_alloc
 multimin.finc, [620](#)
 fgsl_multimin_fdfminimizer_conjugate_fr
 fgsl, [157](#)
 fgsl_multimin_fdfminimizer_conjugate_pr
 fgsl, [158](#)
 fgsl_multimin_fdfminimizer_free
 multimin.finc, [620](#)
 fgsl_multimin_fdfminimizer_gradient
 multimin.finc, [620](#)
 fgsl_multimin_fdfminimizer_iterate

- multimin.finc, [620](#)
- fgsl_multimin_fdfminimizer_minimum
 - multimin.finc, [620](#)
- fgsl_multimin_fdfminimizer_name
 - multimin.finc, [620](#)
- fgsl_multimin_fdfminimizer_restart
 - multimin.finc, [620](#)
- fgsl_multimin_fdfminimizer_set
 - multimin.finc, [621](#)
- fgsl_multimin_fdfminimizer_status
 - fgsl_well_defined, [270](#)
 - multimin.finc, [621](#)
- fgsl_multimin_fdfminimizer_steepest_descent
 - fgsl, [158](#)
- fgsl_multimin_fdfminimizer_vector_bfgs
 - fgsl, [158](#)
- fgsl_multimin_fdfminimizer_vector_bfgs2
 - fgsl, [158](#)
- fgsl_multimin_fdfminimizer_x
 - multimin.finc, [621](#)
- fgsl_multimin_fminimizer_alloc
 - multimin.finc, [621](#)
- fgsl_multimin_fminimizer_free
 - multimin.finc, [621](#)
- fgsl_multimin_fminimizer_iterate
 - multimin.finc, [621](#)
- fgsl_multimin_fminimizer_minimum
 - multimin.finc, [622](#)
- fgsl_multimin_fminimizer_name
 - multimin.finc, [622](#)
- fgsl_multimin_fminimizer_nmsimplex
 - fgsl, [158](#)
- fgsl_multimin_fminimizer_nmsimplex2
 - fgsl, [158](#)
- fgsl_multimin_fminimizer_nmsimplex2rand
 - fgsl, [158](#)
- fgsl_multimin_fminimizer_set
 - multimin.finc, [622](#)
- fgsl_multimin_fminimizer_size
 - multimin.finc, [622](#)
- fgsl_multimin_fminimizer_status
 - fgsl_well_defined, [270](#)
 - multimin.finc, [622](#)
- fgsl_multimin_fminimizer_x
 - multimin.finc, [622](#)
- fgsl_multimin_function_cfree
 - multimin.finc, [625](#)
- fgsl_multimin_function_cinit
 - multimin.finc, [625](#)
- fgsl_multimin_function_fdf_cfree
 - multimin.finc, [625](#)
- fgsl_multimin_function_fdf_cinit
 - multimin.finc, [625](#)
- fgsl_multimin_function_fdf_free
 - multimin.finc, [623](#)
- fgsl_multimin_function_fdf_init
 - multimin.finc, [623](#)
- fgsl_multimin_function_free
 - multimin.finc, [623](#)
- fgsl_multimin_function_init
 - multimin.finc, [623](#)
- fgsl_multimin_test_gradient
 - multimin.finc, [623](#)
- fgsl_multimin_test_size
 - multimin.finc, [623](#)
- fgsl_multiroot_fdfsolver_alloc
 - multiroots.finc, [629](#)
- fgsl_multiroot_fdfsolver_dx
 - multiroots.finc, [629](#)
- fgsl_multiroot_fdfsolver_f
 - multiroots.finc, [629](#)
- fgsl_multiroot_fdfsolver_free
 - multiroots.finc, [630](#)
- fgsl_multiroot_fdfsolver_gnewton
 - fgsl, [159](#)
- fgsl_multiroot_fdfsolver_hybridj
 - fgsl, [159](#)
- fgsl_multiroot_fdfsolver_hybridjsj
 - fgsl, [159](#)
- fgsl_multiroot_fdfsolver_iterate
 - multiroots.finc, [630](#)
- fgsl_multiroot_fdfsolver_name
 - multiroots.finc, [630](#)
- fgsl_multiroot_fdfsolver_newton
 - fgsl, [159](#)
- fgsl_multiroot_fdfsolver_root
 - multiroots.finc, [630](#)
- fgsl_multiroot_fdfsolver_set
 - multiroots.finc, [630](#)
- fgsl_multiroot_fdfsolver_status
 - fgsl_well_defined, [270](#)
 - multiroots.finc, [630](#)
- fgsl_multiroot_fsolver_alloc
 - multiroots.finc, [630](#)
- fgsl_multiroot_fsolver_broyden
 - fgsl, [159](#)
- fgsl_multiroot_fsolver_dnewton
 - fgsl, [159](#)
- fgsl_multiroot_fsolver_dx
 - multiroots.finc, [631](#)
- fgsl_multiroot_fsolver_f
 - multiroots.finc, [631](#)
- fgsl_multiroot_fsolver_free
 - multiroots.finc, [631](#)
- fgsl_multiroot_fsolver_hybrid
 - fgsl, [159](#)
- fgsl_multiroot_fsolver_hybridjsj
 - fgsl, [160](#)
- fgsl_multiroot_fsolver_iterate
 - multiroots.finc, [631](#)
- fgsl_multiroot_fsolver_name
 - multiroots.finc, [631](#)
- fgsl_multiroot_fsolver_root
 - multiroots.finc, [631](#)
- fgsl_multiroot_fsolver_set
 - multiroots.finc, [631](#)

fgsl_multiroot_fsolver_status
 fgsl_well_defined, 270
 multiroots.finc, 632
 fgsl_multiroot_function_cfree
 multiroots.finc, 634
 fgsl_multiroot_function_cinit
 multiroots.finc, 634
 fgsl_multiroot_function_fdf_cfree
 multiroots.finc, 634
 fgsl_multiroot_function_fdf_cinit
 multiroots.finc, 635
 fgsl_multiroot_function_fdf_free
 multiroots.finc, 632
 fgsl_multiroot_function_fdf_init
 multiroots.finc, 632
 fgsl_multiroot_function_free
 multiroots.finc, 632
 fgsl_multiroot_function_init
 multiroots.finc, 632
 fgsl_multiroot_test_delta
 multiroots.finc, 632
 fgsl_multiroot_test_residual
 multiroots.finc, 633
 fgsl_multiset_alloc
 permutation.finc, 692
 fgsl_multiset_calloc
 permutation.finc, 692
 fgsl_multiset_data
 permutation.finc, 693
 fgsl_multiset_fprintf
 permutation.finc, 693
 fgsl_multiset_fread
 permutation.finc, 693
 fgsl_multiset_free
 permutation.finc, 693
 fgsl_multiset_fscanf
 permutation.finc, 693
 fgsl_multiset_fwrite
 permutation.finc, 693
 fgsl_multiset_get
 permutation.finc, 694
 fgsl_multiset_init_first
 permutation.finc, 694
 fgsl_multiset_init_last
 permutation.finc, 694
 fgsl_multiset_k
 permutation.finc, 694
 fgsl_multiset_memcpy
 permutation.finc, 694
 fgsl_multiset_n
 permutation.finc, 694
 fgsl_multiset_next
 permutation.finc, 695
 fgsl_multiset_prev
 permutation.finc, 695
 fgsl_multiset_status
 fgsl_well_defined, 270
 permutation.finc, 695
 fgsl_multiset_valid
 permutation.finc, 695
 fgsl_name
 misc.finc, 548
 fgsl_ntuple_bookdata
 ntuple.finc, 656
 fgsl_ntuple_close
 ntuple.finc, 656
 fgsl_ntuple_create
 ntuple.finc, 657
 fgsl_ntuple_data
 ntuple.finc, 657
 fgsl_ntuple_open
 ntuple.finc, 657
 fgsl_ntuple_project
 ntuple.finc, 657
 fgsl_ntuple_read
 ntuple.finc, 657
 fgsl_ntuple_select_fn_cfree
 ntuple.finc, 660
 fgsl_ntuple_select_fn_cinit
 ntuple.finc, 660
 fgsl_ntuple_select_fn_free
 ntuple.finc, 657
 fgsl_ntuple_select_fn_init
 ntuple.finc, 658
 fgsl_ntuple_select_fn_status
 fgsl_well_defined, 270
 ntuple.finc, 658
 fgsl_ntuple_size
 ntuple.finc, 658
 fgsl_ntuple_status
 fgsl_well_defined, 271
 ntuple.finc, 658
 fgsl_ntuple_value_fn_cfree
 ntuple.finc, 660
 fgsl_ntuple_value_fn_cinit
 ntuple.finc, 660
 fgsl_ntuple_value_fn_free
 ntuple.finc, 658
 fgsl_ntuple_value_fn_init
 ntuple.finc, 658
 fgsl_ntuple_value_fn_status
 fgsl_well_defined, 271
 ntuple.finc, 658
 fgsl_ntuple_write
 ntuple.finc, 659
 fgsl_obj_c_ptr, 232
 fgsl_matrix_c_ptr, 232
 fgsl_rng_c_ptr, 232
 fgsl_vector_c_ptr, 232
 fgsl_odeiv2_control_alloc
 ode.finc, 663
 fgsl_odeiv2_control_errlevel
 ode.finc, 663
 fgsl_odeiv2_control_free
 ode.finc, 663
 fgsl_odeiv2_control_hadjust

ode.finc, [664](#)
fgsl_odeiv2_control_init
ode.finc, [664](#)
fgsl_odeiv2_control_name
ode.finc, [664](#)
fgsl_odeiv2_control_scaled_new
ode.finc, [664](#)
fgsl_odeiv2_control_set_driver
ode.finc, [664](#)
fgsl_odeiv2_control_standard_new
ode.finc, [665](#)
fgsl_odeiv2_control_status
fgsl_well_defined, [271](#)
ode.finc, [665](#)
fgsl_odeiv2_control_y_new
ode.finc, [665](#)
fgsl_odeiv2_control_yp_new
ode.finc, [665](#)
fgsl_odeiv2_driver_alloc_scaled_new
ode.finc, [665](#)
fgsl_odeiv2_driver_alloc_standard_new
ode.finc, [665](#)
fgsl_odeiv2_driver_alloc_y_new
ode.finc, [666](#)
fgsl_odeiv2_driver_alloc_yp_new
ode.finc, [666](#)
fgsl_odeiv2_driver_apply
ode.finc, [666](#)
fgsl_odeiv2_driver_apply_fixed_step
ode.finc, [666](#)
fgsl_odeiv2_driver_free
ode.finc, [666](#)
fgsl_odeiv2_driver_reset
ode.finc, [667](#)
fgsl_odeiv2_driver_reset_hstart
ode.finc, [667](#)
fgsl_odeiv2_driver_set_hmax
ode.finc, [667](#)
fgsl_odeiv2_driver_set_hmin
ode.finc, [667](#)
fgsl_odeiv2_driver_set_nmax
ode.finc, [667](#)
fgsl_odeiv2_driver_status
fgsl_well_defined, [271](#)
ode.finc, [667](#)
fgsl_odeiv2_evolve_alloc
ode.finc, [668](#)
fgsl_odeiv2_evolve_apply
ode.finc, [668](#)
fgsl_odeiv2_evolve_apply_fixed_step
ode.finc, [668](#)
fgsl_odeiv2_evolve_free
ode.finc, [668](#)
fgsl_odeiv2_evolve_reset
ode.finc, [668](#)
fgsl_odeiv2_evolve_set_driver
ode.finc, [669](#)
fgsl_odeiv2_evolve_status
fgsl_well_defined, [271](#)
ode.finc, [669](#)
fgsl_odeiv2_step_alloc
ode.finc, [669](#)
fgsl_odeiv2_step_apply
ode.finc, [669](#)
fgsl_odeiv2_step_bsimp
fgsl, [160](#)
fgsl_odeiv2_step_free
ode.finc, [669](#)
fgsl_odeiv2_step_msadams
fgsl, [160](#)
fgsl_odeiv2_step_msbdf
fgsl, [160](#)
fgsl_odeiv2_step_name
ode.finc, [669](#)
fgsl_odeiv2_step_order
ode.finc, [670](#)
fgsl_odeiv2_step_reset
ode.finc, [670](#)
fgsl_odeiv2_step_rk1imp
fgsl, [160](#)
fgsl_odeiv2_step_rk2
fgsl, [160](#)
fgsl_odeiv2_step_rk2imp
fgsl, [160](#)
fgsl_odeiv2_step_rk4
fgsl, [161](#)
fgsl_odeiv2_step_rk4imp
fgsl, [161](#)
fgsl_odeiv2_step_rk8pd
fgsl, [161](#)
fgsl_odeiv2_step_rkck
fgsl, [161](#)
fgsl_odeiv2_step_rkf45
fgsl, [161](#)
fgsl_odeiv2_step_set_driver
ode.finc, [670](#)
fgsl_odeiv2_step_status
fgsl_well_defined, [271](#)
ode.finc, [670](#)
fgsl_odeiv2_system_cfree
ode.finc, [677](#)
fgsl_odeiv2_system_cinit
ode.finc, [678](#)
fgsl_odeiv2_system_free
ode.finc, [670](#)
fgsl_odeiv2_system_init
ode.finc, [670](#)
fgsl_odeiv2_system_status
fgsl_well_defined, [271](#)
ode.finc, [671](#)
fgsl_odeiv_control_alloc
ode.finc, [671](#)
fgsl_odeiv_control_free
ode.finc, [671](#)
fgsl_odeiv_control_hadjust
ode.finc, [671](#)

fgsl_odeiv_control_init
ode.finc, 671

fgsl_odeiv_control_name
ode.finc, 672

fgsl_odeiv_control_scaled_new
ode.finc, 672

fgsl_odeiv_control_standard_new
ode.finc, 672

fgsl_odeiv_control_status
fgsl_well_defined, 271
ode.finc, 672

fgsl_odeiv_control_y_new
ode.finc, 672

fgsl_odeiv_control_yp_new
ode.finc, 673

fgsl_odeiv_evolve_alloc
ode.finc, 673

fgsl_odeiv_evolve_apply
ode.finc, 673

fgsl_odeiv_evolve_free
ode.finc, 673

fgsl_odeiv_evolve_reset
ode.finc, 673

fgsl_odeiv_evolve_status
fgsl_well_defined, 272
ode.finc, 673

fgsl_odeiv_hadj_dec
fgsl, 161

fgsl_odeiv_hadj_inc
fgsl, 161

fgsl_odeiv_hadj_nil
fgsl, 161

fgsl_odeiv_step_alloc
ode.finc, 674

fgsl_odeiv_step_apply
ode.finc, 674

fgsl_odeiv_step_bsimp
fgsl, 162

fgsl_odeiv_step_free
ode.finc, 674

fgsl_odeiv_step_gear1
fgsl, 162

fgsl_odeiv_step_gear2
fgsl, 162

fgsl_odeiv_step_name
ode.finc, 674

fgsl_odeiv_step_order
ode.finc, 674

fgsl_odeiv_step_reset
ode.finc, 674

fgsl_odeiv_step_rk2
fgsl, 162

fgsl_odeiv_step_rk2imp
fgsl, 162

fgsl_odeiv_step_rk2simp
fgsl, 162

fgsl_odeiv_step_rk4
fgsl, 162

fgsl_odeiv_step_rk4imp
fgsl, 162

fgsl_odeiv_step_rk8pd
fgsl, 163

fgsl_odeiv_step_rkck
fgsl, 163

fgsl_odeiv_step_rkf45
fgsl, 163

fgsl_odeiv_step_status
fgsl_well_defined, 272
ode.finc, 675

fgsl_odeiv_system_cfree
ode.finc, 678

fgsl_odeiv_system_cinit
ode.finc, 678

fgsl_odeiv_system_free
ode.finc, 675

fgsl_odeiv_system_init
ode.finc, 675

fgsl_odeiv_system_status
fgsl_well_defined, 272
ode.finc, 675

fgsl_open
io.finc, 456

fgsl_pathmax
fgsl, 163

fgsl_permutation_alloc
permutation.finc, 695

fgsl_permutation_calloc
permutation.finc, 695

fgsl_permutation_canonical_cycles
permutation.finc, 695

fgsl_permutation_canonical_to_linear
permutation.finc, 696

fgsl_permutation_data
permutation.finc, 696

fgsl_permutation_fprintf
permutation.finc, 696

fgsl_permutation_fread
permutation.finc, 696

fgsl_permutation_free
permutation.finc, 696

fgsl_permutation_fscanf
permutation.finc, 696

fgsl_permutation_fwrite
permutation.finc, 697

fgsl_permutation_get
permutation.finc, 697

fgsl_permutation_init
permutation.finc, 697

fgsl_permutation_inverse
permutation.finc, 697

fgsl_permutation_inversions
permutation.finc, 697

fgsl_permutation_linear_cycles
permutation.finc, 697

fgsl_permutation_linear_to_canonical
permutation.finc, 698

- fgsl_permutation_memcpy
 - permutation.finc, [698](#)
- fgsl_permutation_mul
 - permutation.finc, [698](#)
- fgsl_permutation_next
 - permutation.finc, [698](#)
- fgsl_permutation_prev
 - permutation.finc, [698](#)
- fgsl_permutation_reverse
 - permutation.finc, [698](#)
- fgsl_permutation_size
 - permutation.finc, [699](#)
- fgsl_permutation_status
 - fgsl_well_defined, [272](#)
 - permutation.finc, [699](#)
- fgsl_permutation_swap
 - permutation.finc, [699](#)
- fgsl_permutation_valid
 - permutation.finc, [699](#)
- fgsl_permute, [239](#)
 - fgsl_permute, [239](#)
 - fgsl_permute_long, [239](#)
 - permutation.finc, [699](#)
- fgsl_permute_inverse, [239](#)
 - fgsl_permute_inverse, [240](#)
 - fgsl_permute_long_inverse, [240](#)
 - permutation.finc, [699](#)
- fgsl_permute_long
 - fgsl_permute, [239](#)
 - permutation.finc, [700](#)
- fgsl_permute_long_inverse
 - fgsl_permute_inverse, [240](#)
 - permutation.finc, [700](#)
- fgsl_permute_matrix
 - permutation.finc, [700](#)
- fgsl_permute_vector
 - permutation.finc, [700](#)
- fgsl_permute_vector_inverse
 - permutation.finc, [700](#)
- fgsl_poly_complex_eval
 - poly.finc, [715](#)
- fgsl_poly_complex_solve
 - poly.finc, [715](#)
- fgsl_poly_complex_solve_cubic
 - poly.finc, [715](#)
- fgsl_poly_complex_solve_quadratic
 - poly.finc, [715](#)
- fgsl_poly_complex_workspace_alloc
 - poly.finc, [715](#)
- fgsl_poly_complex_workspace_free
 - poly.finc, [716](#)
- fgsl_poly_complex_workspace_stat
 - fgsl_well_defined, [272](#)
 - poly.finc, [716](#)
- fgsl_poly_dd_eval
 - poly.finc, [716](#)
- fgsl_poly_dd_hermite_init
 - poly.finc, [716](#)
- fgsl_poly_dd_init
 - poly.finc, [716](#)
- fgsl_poly_dd_taylor
 - poly.finc, [716](#)
- fgsl_poly_eval
 - poly.finc, [717](#)
- fgsl_poly_eval_derivs
 - poly.finc, [717](#)
- fgsl_poly_solve_cubic
 - poly.finc, [717](#)
- fgsl_poly_solve_quadratic
 - poly.finc, [717](#)
- fgsl_prec_approx
 - fgsl, [163](#)
- fgsl_prec_double
 - fgsl, [163](#)
- fgsl_prec_single
 - fgsl, [163](#)
- fgsl_qrng_alloc
 - rng.finc, [740](#)
- fgsl_qrng_clone
 - rng.finc, [740](#)
- fgsl_qrng_free
 - rng.finc, [740](#)
- fgsl_qrng_get
 - rng.finc, [740](#)
- fgsl_qrng_haltan
 - fgsl, [163](#)
- fgsl_qrng_init
 - rng.finc, [740](#)
- fgsl_qrng_memcpy
 - rng.finc, [741](#)
- fgsl_qrng_name
 - rng.finc, [741](#)
- fgsl_qrng_niederreiter_2
 - fgsl, [164](#)
- fgsl_qrng_reversehaltan
 - fgsl, [164](#)
- fgsl_qrng_sobol
 - fgsl, [164](#)
- fgsl_qrng_status
 - fgsl_well_defined, [272](#)
 - rng.finc, [741](#)
- fgsl_qrng_bernoulli
 - rng.finc, [741](#)
- fgsl_qrng_bernoulli_pdf
 - rng.finc, [741](#)
- fgsl_qrng_beta
 - rng.finc, [741](#)
- fgsl_qrng_beta_pdf
 - rng.finc, [742](#)
- fgsl_qrng_binomial
 - rng.finc, [742](#)
- fgsl_qrng_binomial_pdf
 - rng.finc, [742](#)
- fgsl_qrng_bivariate_gaussian
 - rng.finc, [742](#)
- fgsl_qrng_bivariate_gaussian_pdf

- rng.finc, [742](#)
- fgsl_ran_cauchy
 - rng.finc, [743](#)
- fgsl_ran_cauchy_pdf
 - rng.finc, [743](#)
- fgsl_ran_chisq
 - rng.finc, [743](#)
- fgsl_ran_chisq_pdf
 - rng.finc, [743](#)
- fgsl_ran_choose
 - rng.finc, [743](#)
- fgsl_ran_dir_2d
 - rng.finc, [743](#)
- fgsl_ran_dir_2d_trig_method
 - rng.finc, [744](#)
- fgsl_ran_dir_3d
 - rng.finc, [744](#)
- fgsl_ran_dir_nd
 - rng.finc, [744](#)
- fgsl_ran_dirichlet
 - rng.finc, [744](#)
- fgsl_ran_dirichlet_lnpdf
 - rng.finc, [744](#)
- fgsl_ran_dirichlet_pdf
 - rng.finc, [745](#)
- fgsl_ran_discrete
 - rng.finc, [745](#)
- fgsl_ran_discrete_free
 - rng.finc, [745](#)
- fgsl_ran_discrete_pdf
 - rng.finc, [745](#)
- fgsl_ran_discrete_preproc
 - rng.finc, [745](#)
- fgsl_ran_discrete_t_status
 - fgsl_well_defined, [272](#)
 - rng.finc, [745](#)
- fgsl_ran_exponential
 - rng.finc, [746](#)
- fgsl_ran_exponential_pdf
 - rng.finc, [746](#)
- fgsl_ran_exppow
 - rng.finc, [746](#)
- fgsl_ran_exppow_pdf
 - rng.finc, [746](#)
- fgsl_ran_fdist
 - rng.finc, [746](#)
- fgsl_ran_fdist_pdf
 - rng.finc, [746](#)
- fgsl_ran_flat
 - rng.finc, [747](#)
- fgsl_ran_flat_pdf
 - rng.finc, [747](#)
- fgsl_ran_gamma
 - rng.finc, [747](#)
- fgsl_ran_gamma_mt
 - rng.finc, [747](#)
- fgsl_ran_gamma_pdf
 - rng.finc, [747](#)
- fgsl_ran_gaussian
 - rng.finc, [747](#)
- fgsl_ran_gaussian_pdf
 - rng.finc, [748](#)
- fgsl_ran_gaussian_ratio_method
 - rng.finc, [748](#)
- fgsl_ran_gaussian_tail
 - rng.finc, [748](#)
- fgsl_ran_gaussian_tail_pdf
 - rng.finc, [748](#)
- fgsl_ran_gaussian_ziggurat
 - rng.finc, [748](#)
- fgsl_ran_geometric
 - rng.finc, [748](#)
- fgsl_ran_geometric_pdf
 - rng.finc, [749](#)
- fgsl_ran_gumbel1
 - rng.finc, [749](#)
- fgsl_ran_gumbel1_pdf
 - rng.finc, [749](#)
- fgsl_ran_gumbel2
 - rng.finc, [749](#)
- fgsl_ran_gumbel2_pdf
 - rng.finc, [749](#)
- fgsl_ran_hypergeometric
 - rng.finc, [749](#)
- fgsl_ran_hypergeometric_pdf
 - rng.finc, [750](#)
- fgsl_ran_landau
 - rng.finc, [750](#)
- fgsl_ran_landau_pdf
 - rng.finc, [750](#)
- fgsl_ran_laplace
 - rng.finc, [750](#)
- fgsl_ran_laplace_pdf
 - rng.finc, [750](#)
- fgsl_ran_levy
 - rng.finc, [750](#)
- fgsl_ran_levy_skew
 - rng.finc, [751](#)
- fgsl_ran_logarithmic
 - rng.finc, [751](#)
- fgsl_ran_logarithmic_pdf
 - rng.finc, [751](#)
- fgsl_ran_logistic
 - rng.finc, [751](#)
- fgsl_ran_logistic_pdf
 - rng.finc, [751](#)
- fgsl_ran_lognormal
 - rng.finc, [751](#)
- fgsl_ran_lognormal_pdf
 - rng.finc, [752](#)
- fgsl_ran_multinomial
 - rng.finc, [752](#)
- fgsl_ran_multinomial_lnpdf
 - rng.finc, [752](#)
- fgsl_ran_multinomial_pdf
 - rng.finc, [752](#)

fgsl_ran_multivariate_gaussian
rng.finc, [752](#)

fgsl_ran_multivariate_gaussian_log_pdf
rng.finc, [752](#)

fgsl_ran_multivariate_gaussian_mean
rng.finc, [753](#)

fgsl_ran_multivariate_gaussian_pdf
rng.finc, [753](#)

fgsl_ran_multivariate_gaussian_vcov
rng.finc, [753](#)

fgsl_ran_negative_binomial
rng.finc, [753](#)

fgsl_ran_negative_binomial_pdf
rng.finc, [753](#)

fgsl_ran_pareto
rng.finc, [754](#)

fgsl_ran_pareto_pdf
rng.finc, [754](#)

fgsl_ran_pascal
rng.finc, [754](#)

fgsl_ran_pascal_pdf
rng.finc, [754](#)

fgsl_ran_poisson
rng.finc, [754](#)

fgsl_ran_poisson_pdf
rng.finc, [754](#)

fgsl_ran_rayleigh
rng.finc, [755](#)

fgsl_ran_rayleigh_pdf
rng.finc, [755](#)

fgsl_ran_rayleigh_tail
rng.finc, [755](#)

fgsl_ran_rayleigh_tail_pdf
rng.finc, [755](#)

fgsl_ran_sample
rng.finc, [755](#)

fgsl_ran_shuffle, [242](#)
fgsl_ran_shuffle, [242](#)
fgsl_ran_shuffle_double, [242](#)
fgsl_ran_shuffle_size_t, [242](#)
rng.finc, [755](#)

fgsl_ran_shuffle_double
fgsl_ran_shuffle, [242](#)
rng.finc, [756](#)

fgsl_ran_shuffle_size_t
fgsl_ran_shuffle, [242](#)
rng.finc, [756](#)

fgsl_ran_tdist
rng.finc, [756](#)

fgsl_ran_tdist_pdf
rng.finc, [756](#)

fgsl_ran_ugaussian
rng.finc, [756](#)

fgsl_ran_ugaussian_pdf
rng.finc, [756](#)

fgsl_ran_ugaussian_ratio_method
rng.finc, [757](#)

fgsl_ran_ugaussian_tail
rng.finc, [757](#)

fgsl_ran_ugaussian_tail_pdf
rng.finc, [757](#)

fgsl_ran_weibull
rng.finc, [757](#)

fgsl_ran_weibull_pdf
rng.finc, [757](#)

fgsl_ran_wishart
rng.finc, [757](#)

fgsl_ran_wishart_log_pdf
rng.finc, [758](#)

fgsl_ran_wishart_pdf
rng.finc, [758](#)

fgsl_rng_alloc
rng.finc, [758](#)

fgsl_rng_borosh13
fgsl, [164](#)

fgsl_rng_c_ptr
fgsl_obj_c_ptr, [232](#)
rng.finc, [758](#)

fgsl_rng_clone
rng.finc, [758](#)

fgsl_rng_cmrg
fgsl, [164](#)

fgsl_rng_coveyou
fgsl, [164](#)

fgsl_rng_default
fgsl, [164](#)

fgsl_rng_default_seed
fgsl, [164](#)

fgsl_rng_env_setup
rng.finc, [759](#)

fgsl_rng_fishman18
fgsl, [165](#)

fgsl_rng_fishman20
fgsl, [165](#)

fgsl_rng_fishman2x
fgsl, [165](#)

fgsl_rng_fread
rng.finc, [759](#)

fgsl_rng_free
rng.finc, [759](#)

fgsl_rng_fwrite
rng.finc, [759](#)

fgsl_rng_get
rng.finc, [759](#)

fgsl_rng_gfsr4
fgsl, [165](#)

fgsl_rng_knuthran
fgsl, [165](#)

fgsl_rng_knuthran2
fgsl, [165](#)

fgsl_rng_knuthran2002
fgsl, [165](#)

fgsl_rng_lecuyer21
fgsl, [165](#)

fgsl_rng_max
rng.finc, [759](#)

fgsl_rng_memcpy
 rng.finc, [759](#)
fgsl_rng_min
 rng.finc, [760](#)
fgsl_rng_minstd
 fgsl, [166](#)
fgsl_rng_mrg
 fgsl, [166](#)
fgsl_rng_mt19937
 fgsl, [166](#)
fgsl_rng_mt19937_1998
 fgsl, [166](#)
fgsl_rng_mt19937_1999
 fgsl, [166](#)
fgsl_rng_name
 rng.finc, [760](#)
fgsl_rng_r250
 fgsl, [166](#)
fgsl_rng_ran0
 fgsl, [166](#)
fgsl_rng_ran1
 fgsl, [166](#)
fgsl_rng_ran2
 fgsl, [167](#)
fgsl_rng_ran3
 fgsl, [167](#)
fgsl_rng_rand
 fgsl, [167](#)
fgsl_rng_rand48
 fgsl, [167](#)
fgsl_rng_random128_bsd
 fgsl, [167](#)
fgsl_rng_random128_glibc2
 fgsl, [167](#)
fgsl_rng_random128_libc5
 fgsl, [167](#)
fgsl_rng_random256_bsd
 fgsl, [167](#)
fgsl_rng_random256_glibc2
 fgsl, [168](#)
fgsl_rng_random256_libc5
 fgsl, [168](#)
fgsl_rng_random32_bsd
 fgsl, [168](#)
fgsl_rng_random32_glibc2
 fgsl, [168](#)
fgsl_rng_random32_libc5
 fgsl, [168](#)
fgsl_rng_random64_bsd
 fgsl, [168](#)
fgsl_rng_random64_glibc2
 fgsl, [168](#)
fgsl_rng_random64_libc5
 fgsl, [168](#)
fgsl_rng_random8_bsd
 fgsl, [169](#)
fgsl_rng_random8_glibc2
 fgsl, [169](#)
fgsl_rng_random8_libc5
 fgsl, [169](#)
fgsl_rng_random_bsd
 fgsl, [169](#)
fgsl_rng_random_glibc2
 fgsl, [169](#)
fgsl_rng_random_libc5
 fgsl, [169](#)
fgsl_rng_randu
 fgsl, [169](#)
fgsl_rng_ranf
 fgsl, [169](#)
fgsl_rng_ranlux
 fgsl, [170](#)
fgsl_rng_ranlux389
 fgsl, [170](#)
fgsl_rng_ranlxd1
 fgsl, [170](#)
fgsl_rng_ranlxd2
 fgsl, [170](#)
fgsl_rng_ranlxs0
 fgsl, [170](#)
fgsl_rng_ranlxs1
 fgsl, [170](#)
fgsl_rng_ranlxs2
 fgsl, [170](#)
fgsl_rng_ranmar
 fgsl, [170](#)
fgsl_rng_set
 rng.finc, [760](#)
fgsl_rng_slaterc
 fgsl, [171](#)
fgsl_rng_status
 fgsl_well_defined, [272](#)
 rng.finc, [760](#)
fgsl_rng_taus
 fgsl, [171](#)
fgsl_rng_taus113
 fgsl, [171](#)
fgsl_rng_taus2
 fgsl, [171](#)
fgsl_rng_transputer
 fgsl, [171](#)
fgsl_rng_tt800
 fgsl, [171](#)
fgsl_rng_uni
 fgsl, [171](#)
fgsl_rng_uni32
 fgsl, [171](#)
fgsl_rng_uniform
 rng.finc, [760](#)
fgsl_rng_uniform_int
 rng.finc, [760](#)
fgsl_rng_uniform_pos
 rng.finc, [761](#)
fgsl_rng_vax
 fgsl, [172](#)
fgsl_rng_waterman14

fgsl, 172
fgsl_rng_zuf
fgsl, 172
fgsl_root_fdfsolver_alloc
roots.finc, 801
fgsl_root_fdfsolver_free
roots.finc, 801
fgsl_root_fdfsolver_iterate
roots.finc, 801
fgsl_root_fdfsolver_name
roots.finc, 801
fgsl_root_fdfsolver_newton
fgsl, 172
fgsl_root_fdfsolver_root
roots.finc, 801
fgsl_root_fdfsolver_secant
fgsl, 172
fgsl_root_fdfsolver_set
roots.finc, 801
fgsl_root_fdfsolver_status
fgsl_well_defined, 273
roots.finc, 801
fgsl_root_fdfsolver_steffenson
fgsl, 172
fgsl_root_fsolver_alloc
roots.finc, 802
fgsl_root_fsolver_bisection
fgsl, 172
fgsl_root_fsolver_brent
fgsl, 172
fgsl_root_fsolver_falsepos
fgsl, 173
fgsl_root_fsolver_free
roots.finc, 802
fgsl_root_fsolver_iterate
roots.finc, 802
fgsl_root_fsolver_name
roots.finc, 802
fgsl_root_fsolver_root
roots.finc, 802
fgsl_root_fsolver_set
roots.finc, 802
fgsl_root_fsolver_status
fgsl_well_defined, 273
roots.finc, 802
fgsl_root_fsolver_x_lower
roots.finc, 803
fgsl_root_fsolver_x_upper
roots.finc, 803
fgsl_root_test_delta
roots.finc, 803
fgsl_root_test_interval
roots.finc, 803
fgsl_root_test_residual
roots.finc, 803
fgsl_rstat_add
rstat.finc, 808
fgsl_rstat_alloc
rstat.finc, 808
fgsl_rstat_free
rstat.finc, 808
fgsl_rstat_kurtosis
rstat.finc, 808
fgsl_rstat_max
rstat.finc, 809
fgsl_rstat_mean
rstat.finc, 809
fgsl_rstat_median
rstat.finc, 809
fgsl_rstat_min
rstat.finc, 809
fgsl_rstat_n
rstat.finc, 809
fgsl_rstat_quantile_add
rstat.finc, 809
fgsl_rstat_quantile_alloc
rstat.finc, 809
fgsl_rstat_quantile_free
rstat.finc, 810
fgsl_rstat_quantile_get
rstat.finc, 810
fgsl_rstat_quantile_reset
rstat.finc, 810
fgsl_rstat_reset
rstat.finc, 810
fgsl_rstat_rms
rstat.finc, 810
fgsl_rstat_sd
rstat.finc, 810
fgsl_rstat_sd_mean
rstat.finc, 810
fgsl_rstat_skew
rstat.finc, 811
fgsl_rstat_variance
rstat.finc, 811
fgsl_set_error_handler
error.finc, 344
fgsl_set_error_handler_off
error.finc, 344
fgsl_sfairy_ai
specfunc.finc, 833
fgsl_sfairy_ai_deriv
specfunc.finc, 833
fgsl_sfairy_ai_deriv_e
specfunc.finc, 833
fgsl_sfairy_ai_deriv_scaled
specfunc.finc, 833
fgsl_sfairy_ai_deriv_scaled_e
specfunc.finc, 834
fgsl_sfairy_ai_e
specfunc.finc, 834
fgsl_sfairy_ai_scaled
specfunc.finc, 834
fgsl_sfairy_ai_scaled_e
specfunc.finc, 834
fgsl_sfairy_bi

specfunc.finc, [834](#)
 fgsl_sf_airy_bi_deriv
 specfunc.finc, [834](#)
 fgsl_sf_airy_bi_deriv_e
 specfunc.finc, [835](#)
 fgsl_sf_airy_bi_deriv_scaled
 specfunc.finc, [835](#)
 fgsl_sf_airy_bi_deriv_scaled_e
 specfunc.finc, [835](#)
 fgsl_sf_airy_bi_e
 specfunc.finc, [835](#)
 fgsl_sf_airy_bi_scaled
 specfunc.finc, [835](#)
 fgsl_sf_airy_bi_scaled_e
 specfunc.finc, [835](#)
 fgsl_sf_airy_zero_ai
 specfunc.finc, [836](#)
 fgsl_sf_airy_zero_ai_deriv
 specfunc.finc, [836](#)
 fgsl_sf_airy_zero_ai_deriv_e
 specfunc.finc, [836](#)
 fgsl_sf_airy_zero_ai_e
 specfunc.finc, [836](#)
 fgsl_sf_airy_zero_bi
 specfunc.finc, [836](#)
 fgsl_sf_airy_zero_bi_deriv
 specfunc.finc, [836](#)
 fgsl_sf_airy_zero_bi_deriv_e
 specfunc.finc, [837](#)
 fgsl_sf_airy_zero_bi_e
 specfunc.finc, [837](#)
 fgsl_sf_angle_restrict_pos
 specfunc.finc, [897](#)
 fgsl_sf_angle_restrict_pos_e
 specfunc.finc, [837](#)
 fgsl_sf_angle_restrict_symm
 specfunc.finc, [897](#)
 fgsl_sf_angle_restrict_symm_e
 specfunc.finc, [837](#)
 fgsl_sf_atanint
 specfunc.finc, [897](#)
 fgsl_sf_atanint_e
 specfunc.finc, [837](#)
 fgsl_sf_bessel_ic0
 specfunc.finc, [897](#)
 fgsl_sf_bessel_ic0_e
 specfunc.finc, [837](#)
 fgsl_sf_bessel_ic0_scaled
 specfunc.finc, [897](#)
 fgsl_sf_bessel_ic0_scaled_e
 specfunc.finc, [838](#)
 fgsl_sf_bessel_ic1
 specfunc.finc, [898](#)
 fgsl_sf_bessel_ic1_e
 specfunc.finc, [838](#)
 fgsl_sf_bessel_ic1_scaled
 specfunc.finc, [898](#)
 fgsl_sf_bessel_ic1_scaled_e
 specfunc.finc, [838](#)
 fgsl_sf_bessel_icn
 specfunc.finc, [898](#)
 fgsl_sf_bessel_icn_array
 specfunc.finc, [898](#)
 fgsl_sf_bessel_icn_e
 specfunc.finc, [838](#)
 fgsl_sf_bessel_icn_scaled
 specfunc.finc, [898](#)
 fgsl_sf_bessel_icn_scaled_array
 specfunc.finc, [898](#)
 fgsl_sf_bessel_icn_scaled_e
 specfunc.finc, [838](#)
 fgsl_sf_bessel_inu
 specfunc.finc, [899](#)
 fgsl_sf_bessel_inu_e
 specfunc.finc, [838](#)
 fgsl_sf_bessel_inu_scaled
 specfunc.finc, [899](#)
 fgsl_sf_bessel_inu_scaled_e
 specfunc.finc, [839](#)
 fgsl_sf_bessel_is0_scaled
 specfunc.finc, [899](#)
 fgsl_sf_bessel_is0_scaled_e
 specfunc.finc, [839](#)
 fgsl_sf_bessel_is1_scaled
 specfunc.finc, [899](#)
 fgsl_sf_bessel_is1_scaled_e
 specfunc.finc, [839](#)
 fgsl_sf_bessel_is2_scaled
 specfunc.finc, [899](#)
 fgsl_sf_bessel_is2_scaled_e
 specfunc.finc, [839](#)
 fgsl_sf_bessel_isl_scaled
 specfunc.finc, [899](#)
 fgsl_sf_bessel_isl_scaled_array
 specfunc.finc, [900](#)
 fgsl_sf_bessel_isl_scaled_e
 specfunc.finc, [839](#)
 fgsl_sf_bessel_jc0
 specfunc.finc, [900](#)
 fgsl_sf_bessel_jc0_e
 specfunc.finc, [839](#)
 fgsl_sf_bessel_jc1
 specfunc.finc, [900](#)
 fgsl_sf_bessel_jc1_e
 specfunc.finc, [840](#)
 fgsl_sf_bessel_jcn
 specfunc.finc, [900](#)
 fgsl_sf_bessel_jcn_array
 specfunc.finc, [900](#)
 fgsl_sf_bessel_jcn_e
 specfunc.finc, [840](#)
 fgsl_sf_bessel_jnu
 specfunc.finc, [900](#)
 fgsl_sf_bessel_jnu_e
 specfunc.finc, [840](#)
 fgsl_sf_bessel_js0

specfunc.finc, 901
fgsl_sf_bessel_js0_e
specfunc.finc, 840
fgsl_sf_bessel_js1
specfunc.finc, 901
fgsl_sf_bessel_js1_e
specfunc.finc, 840
fgsl_sf_bessel_js2
specfunc.finc, 901
fgsl_sf_bessel_js2_e
specfunc.finc, 840
fgsl_sf_bessel_jsl
specfunc.finc, 901
fgsl_sf_bessel_jsl_array
specfunc.finc, 901
fgsl_sf_bessel_jsl_e
specfunc.finc, 841
fgsl_sf_bessel_jsl_steel_array
specfunc.finc, 901
fgsl_sf_bessel_kc0
specfunc.finc, 902
fgsl_sf_bessel_kc0_e
specfunc.finc, 841
fgsl_sf_bessel_kc0_scaled
specfunc.finc, 902
fgsl_sf_bessel_kc0_scaled_e
specfunc.finc, 841
fgsl_sf_bessel_kc1
specfunc.finc, 902
fgsl_sf_bessel_kc1_e
specfunc.finc, 841
fgsl_sf_bessel_kc1_scaled
specfunc.finc, 902
fgsl_sf_bessel_kc1_scaled_e
specfunc.finc, 841
fgsl_sf_bessel_kcn
specfunc.finc, 902
fgsl_sf_bessel_kcn_array
specfunc.finc, 902
fgsl_sf_bessel_kcn_e
specfunc.finc, 841
fgsl_sf_bessel_kcn_scaled
specfunc.finc, 903
fgsl_sf_bessel_kcn_scaled_array
specfunc.finc, 903
fgsl_sf_bessel_kcn_scaled_e
specfunc.finc, 842
fgsl_sf_bessel_knu
specfunc.finc, 903
fgsl_sf_bessel_knu_e
specfunc.finc, 842
fgsl_sf_bessel_knu_scaled
specfunc.finc, 903
fgsl_sf_bessel_knu_scaled_e
specfunc.finc, 842
fgsl_sf_bessel_ks0_scaled
specfunc.finc, 903
fgsl_sf_bessel_ks0_scaled_e
specfunc.finc, 842
fgsl_sf_bessel_ks1_scaled
specfunc.finc, 903
fgsl_sf_bessel_ks1_scaled_e
specfunc.finc, 842
fgsl_sf_bessel_ks2_scaled
specfunc.finc, 904
fgsl_sf_bessel_ks2_scaled_e
specfunc.finc, 842
fgsl_sf_bessel_ksl_scaled
specfunc.finc, 904
fgsl_sf_bessel_ksl_scaled_array
specfunc.finc, 904
fgsl_sf_bessel_ksl_scaled_e
specfunc.finc, 843
fgsl_sf_bessel_lnkn
specfunc.finc, 904
fgsl_sf_bessel_lnkn_e
specfunc.finc, 843
fgsl_sf_bessel_sequence_jnu_e
specfunc.finc, 843
fgsl_sf_bessel_yc0
specfunc.finc, 904
fgsl_sf_bessel_yc0_e
specfunc.finc, 843
fgsl_sf_bessel_yc1
specfunc.finc, 904
fgsl_sf_bessel_yc1_e
specfunc.finc, 843
fgsl_sf_bessel_ycn
specfunc.finc, 905
fgsl_sf_bessel_ycn_array
specfunc.finc, 905
fgsl_sf_bessel_ycn_e
specfunc.finc, 843
fgsl_sf_bessel_ynu
specfunc.finc, 905
fgsl_sf_bessel_ynu_e
specfunc.finc, 844
fgsl_sf_bessel_ys0
specfunc.finc, 905
fgsl_sf_bessel_ys0_e
specfunc.finc, 844
fgsl_sf_bessel_ys1
specfunc.finc, 905
fgsl_sf_bessel_ys1_e
specfunc.finc, 844
fgsl_sf_bessel_ys2
specfunc.finc, 905
fgsl_sf_bessel_ys2_e
specfunc.finc, 844
fgsl_sf_bessel_ysl
specfunc.finc, 906
fgsl_sf_bessel_ysl_array
specfunc.finc, 906
fgsl_sf_bessel_ysl_e
specfunc.finc, 844
fgsl_sf_bessel_zero_jc0

- specfunc.finc, 906
- fgsl_sf_bessel_zero_jc0_e
 - specfunc.finc, 844
- fgsl_sf_bessel_zero_jc1
 - specfunc.finc, 906
- fgsl_sf_bessel_zero_jc1_e
 - specfunc.finc, 845
- fgsl_sf_bessel_zero_jnu
 - specfunc.finc, 906
- fgsl_sf_bessel_zero_jnu_e
 - specfunc.finc, 845
- fgsl_sf_beta
 - specfunc.finc, 906
- fgsl_sf_beta_e
 - specfunc.finc, 845
- fgsl_sf_beta_inc
 - specfunc.finc, 907
- fgsl_sf_beta_inc_e
 - specfunc.finc, 845
- fgsl_sf_chi
 - specfunc.finc, 907
- fgsl_sf_chi_e
 - specfunc.finc, 845
- fgsl_sf_choose
 - specfunc.finc, 907
- fgsl_sf_choose_e
 - specfunc.finc, 845
- fgsl_sf_ci
 - specfunc.finc, 907
- fgsl_sf_ci_e
 - specfunc.finc, 846
- fgsl_sf_clausen
 - specfunc.finc, 907
- fgsl_sf_clausen_e
 - specfunc.finc, 846
- fgsl_sf_complex_cos_e
 - specfunc.finc, 846
- fgsl_sf_complex_dilog_e
 - specfunc.finc, 846
- fgsl_sf_complex_log_e
 - specfunc.finc, 846
- fgsl_sf_complex_logsin_e
 - specfunc.finc, 847
- fgsl_sf_complex_sin_e
 - specfunc.finc, 847
- fgsl_sf_conicalp_0
 - specfunc.finc, 907
- fgsl_sf_conicalp_0_e
 - specfunc.finc, 847
- fgsl_sf_conicalp_1
 - specfunc.finc, 908
- fgsl_sf_conicalp_1_e
 - specfunc.finc, 847
- fgsl_sf_conicalp_cyl_reg
 - specfunc.finc, 908
- fgsl_sf_conicalp_cyl_reg_e
 - specfunc.finc, 847
- fgsl_sf_conicalp_half
 - specfunc.finc, 908
- fgsl_sf_conicalp_half_e
 - specfunc.finc, 848
- fgsl_sf_conicalp_mhalf
 - specfunc.finc, 908
- fgsl_sf_conicalp_mhalf_e
 - specfunc.finc, 848
- fgsl_sf_conicalp_sph_reg
 - specfunc.finc, 908
- fgsl_sf_conicalp_sph_reg_e
 - specfunc.finc, 848
- fgsl_sf_cos_err_e
 - specfunc.finc, 848
- fgsl_sf_coulomb_cl_array
 - specfunc.finc, 848
- fgsl_sf_coulomb_cl_e
 - specfunc.finc, 849
- fgsl_sf_coulomb_wave_f_array
 - specfunc.finc, 849
- fgsl_sf_coulomb_wave_fg_array
 - specfunc.finc, 849
- fgsl_sf_coulomb_wave_fg_e
 - specfunc.finc, 849
- fgsl_sf_coulomb_wave_fgp_array
 - specfunc.finc, 849
- fgsl_sf_coulomb_wave_sphf_array
 - specfunc.finc, 850
- fgsl_sf_coupling_3j
 - specfunc.finc, 908
- fgsl_sf_coupling_3j_e
 - specfunc.finc, 850
- fgsl_sf_coupling_6j
 - specfunc.finc, 909
- fgsl_sf_coupling_6j_e
 - specfunc.finc, 850
- fgsl_sf_coupling_9j
 - specfunc.finc, 909
- fgsl_sf_coupling_9j_e
 - specfunc.finc, 850
- fgsl_sf_dawson
 - specfunc.finc, 909
- fgsl_sf_dawson_e
 - specfunc.finc, 851
- fgsl_sf_debye_1
 - specfunc.finc, 909
- fgsl_sf_debye_1_e
 - specfunc.finc, 851
- fgsl_sf_debye_2
 - specfunc.finc, 909
- fgsl_sf_debye_2_e
 - specfunc.finc, 851
- fgsl_sf_debye_3
 - specfunc.finc, 910
- fgsl_sf_debye_3_e
 - specfunc.finc, 851
- fgsl_sf_debye_4
 - specfunc.finc, 910
- fgsl_sf_debye_4_e
 - specfunc.finc, 910

- specfunc.finc, 851
- fgsl_sf_debye_5
 - specfunc.finc, 910
- fgsl_sf_debye_5_e
 - specfunc.finc, 852
- fgsl_sf_debye_6
 - specfunc.finc, 910
- fgsl_sf_debye_6_e
 - specfunc.finc, 852
- fgsl_sf_dilog
 - specfunc.finc, 910
- fgsl_sf_dilog_e
 - specfunc.finc, 852
- fgsl_sf_doublefact
 - specfunc.finc, 910
- fgsl_sf_doublefact_e
 - specfunc.finc, 852
- fgsl_sf_ellint_d
 - specfunc.finc, 852
- fgsl_sf_ellint_d_e
 - specfunc.finc, 852
- fgsl_sf_ellint_e
 - specfunc.finc, 853
- fgsl_sf_ellint_e_e
 - specfunc.finc, 853
- fgsl_sf_ellint_ecomp
 - specfunc.finc, 853
- fgsl_sf_ellint_ecomp_e
 - specfunc.finc, 853
- fgsl_sf_ellint_f
 - specfunc.finc, 853
- fgsl_sf_ellint_f_e
 - specfunc.finc, 854
- fgsl_sf_ellint_kcomp
 - specfunc.finc, 854
- fgsl_sf_ellint_kcomp_e
 - specfunc.finc, 854
- fgsl_sf_ellint_p
 - specfunc.finc, 854
- fgsl_sf_ellint_p_e
 - specfunc.finc, 854
- fgsl_sf_ellint_pcomp
 - specfunc.finc, 855
- fgsl_sf_ellint_pcomp_e
 - specfunc.finc, 855
- fgsl_sf_ellint_rc
 - specfunc.finc, 855
- fgsl_sf_ellint_rc_e
 - specfunc.finc, 855
- fgsl_sf_ellint_rd
 - specfunc.finc, 855
- fgsl_sf_ellint_rd_e
 - specfunc.finc, 856
- fgsl_sf_ellint_rf
 - specfunc.finc, 856
- fgsl_sf_ellint_rf_e
 - specfunc.finc, 856
- fgsl_sf_ellint_rj
 - specfunc.finc, 856
- fgsl_sf_ellint_rj_e
 - specfunc.finc, 856
- fgsl_sf_elljac_e
 - specfunc.finc, 910
- fgsl_sf_erf
 - specfunc.finc, 911
- fgsl_sf_erf_e
 - specfunc.finc, 857
- fgsl_sf_erf_q
 - specfunc.finc, 911
- fgsl_sf_erf_q_e
 - specfunc.finc, 857
- fgsl_sf_erf_z
 - specfunc.finc, 911
- fgsl_sf_erf_z_e
 - specfunc.finc, 857
- fgsl_sf_erfc
 - specfunc.finc, 911
- fgsl_sf_erfc_e
 - specfunc.finc, 857
- fgsl_sf_eta
 - specfunc.finc, 911
- fgsl_sf_eta_e
 - specfunc.finc, 857
- fgsl_sf_eta_int
 - specfunc.finc, 911
- fgsl_sf_eta_int_e
 - specfunc.finc, 857
- fgsl_sf_exp
 - specfunc.finc, 912
- fgsl_sf_exp_e
 - specfunc.finc, 858
- fgsl_sf_exp_e10_e
 - specfunc.finc, 858
- fgsl_sf_exp_err_e
 - specfunc.finc, 858
- fgsl_sf_exp_err_e10_e
 - specfunc.finc, 858
- fgsl_sf_exp_mult
 - specfunc.finc, 912
- fgsl_sf_exp_mult_e
 - specfunc.finc, 858
- fgsl_sf_exp_mult_e10_e
 - specfunc.finc, 858
- fgsl_sf_exp_mult_err_e
 - specfunc.finc, 859
- fgsl_sf_exp_mult_err_e10_e
 - specfunc.finc, 859
- fgsl_sf_expint_3
 - specfunc.finc, 912
- fgsl_sf_expint_3_e
 - specfunc.finc, 859
- fgsl_sf_expint_e1
 - specfunc.finc, 912
- fgsl_sf_expint_e1_e
 - specfunc.finc, 859
- fgsl_sf_expint_e2

- specfunc.finc, 912
- fgsl_sf_expint_e2_e
 - specfunc.finc, 859
- fgsl_sf_expint_ei
 - specfunc.finc, 912
- fgsl_sf_expint_ei_e
 - specfunc.finc, 860
- fgsl_sf_expint_en
 - specfunc.finc, 912
- fgsl_sf_expint_en_e
 - specfunc.finc, 860
- fgsl_sf_expm1
 - specfunc.finc, 913
- fgsl_sf_expm1_e
 - specfunc.finc, 860
- fgsl_sf_exprel
 - specfunc.finc, 913
- fgsl_sf_exprel_2
 - specfunc.finc, 913
- fgsl_sf_exprel_2_e
 - specfunc.finc, 860
- fgsl_sf_exprel_e
 - specfunc.finc, 860
- fgsl_sf_exprel_n
 - specfunc.finc, 913
- fgsl_sf_exprel_n_e
 - specfunc.finc, 860
- fgsl_sf_fact
 - specfunc.finc, 913
- fgsl_sf_fact_e
 - specfunc.finc, 861
- fgsl_sf_fermi_dirac_0
 - specfunc.finc, 913
- fgsl_sf_fermi_dirac_0_e
 - specfunc.finc, 861
- fgsl_sf_fermi_dirac_1
 - specfunc.finc, 913
- fgsl_sf_fermi_dirac_1_e
 - specfunc.finc, 861
- fgsl_sf_fermi_dirac_2
 - specfunc.finc, 914
- fgsl_sf_fermi_dirac_2_e
 - specfunc.finc, 861
- fgsl_sf_fermi_dirac_3half
 - specfunc.finc, 914
- fgsl_sf_fermi_dirac_3half_e
 - specfunc.finc, 861
- fgsl_sf_fermi_dirac_half
 - specfunc.finc, 914
- fgsl_sf_fermi_dirac_half_e
 - specfunc.finc, 861
- fgsl_sf_fermi_dirac_inc_0
 - specfunc.finc, 914
- fgsl_sf_fermi_dirac_inc_0_e
 - specfunc.finc, 862
- fgsl_sf_fermi_dirac_int
 - specfunc.finc, 914
- fgsl_sf_fermi_dirac_int_e
 - specfunc.finc, 862
- fgsl_sf_fermi_dirac_m1
 - specfunc.finc, 914
- fgsl_sf_fermi_dirac_m1_e
 - specfunc.finc, 862
- fgsl_sf_fermi_dirac_mhalf
 - specfunc.finc, 914
- fgsl_sf_fermi_dirac_mhalf_e
 - specfunc.finc, 862
- fgsl_sf_gamma
 - specfunc.finc, 915
- fgsl_sf_gamma_e
 - specfunc.finc, 862
- fgsl_sf_gamma_inc
 - specfunc.finc, 915
- fgsl_sf_gamma_inc_e
 - specfunc.finc, 862
- fgsl_sf_gamma_inc_p
 - specfunc.finc, 915
- fgsl_sf_gamma_inc_p_e
 - specfunc.finc, 863
- fgsl_sf_gamma_inc_q
 - specfunc.finc, 915
- fgsl_sf_gamma_inc_q_e
 - specfunc.finc, 863
- fgsl_sf_gammainv
 - specfunc.finc, 915
- fgsl_sf_gammainv_e
 - specfunc.finc, 863
- fgsl_sf_gammastar
 - specfunc.finc, 915
- fgsl_sf_gammastar_e
 - specfunc.finc, 863
- fgsl_sf_gegenpoly_1
 - specfunc.finc, 916
- fgsl_sf_gegenpoly_1_e
 - specfunc.finc, 863
- fgsl_sf_gegenpoly_2
 - specfunc.finc, 916
- fgsl_sf_gegenpoly_2_e
 - specfunc.finc, 863
- fgsl_sf_gegenpoly_3
 - specfunc.finc, 916
- fgsl_sf_gegenpoly_3_e
 - specfunc.finc, 864
- fgsl_sf_gegenpoly_array
 - specfunc.finc, 864
- fgsl_sf_gegenpoly_n
 - specfunc.finc, 916
- fgsl_sf_gegenpoly_n_e
 - specfunc.finc, 864
- fgsl_sf_hazard
 - specfunc.finc, 916
- fgsl_sf_hazard_e
 - specfunc.finc, 864
- fgsl_sf_hermite
 - specfunc.finc, 916
- fgsl_sf_hermite_array

- specfunc.finc, [917](#)
- fgsl_sf_hermite_array_deriv
 - specfunc.finc, [917](#)
- fgsl_sf_hermite_deriv
 - specfunc.finc, [917](#)
- fgsl_sf_hermite_deriv_array
 - specfunc.finc, [917](#)
- fgsl_sf_hermite_deriv_e
 - specfunc.finc, [864](#)
- fgsl_sf_hermite_e
 - specfunc.finc, [865](#)
- fgsl_sf_hermite_func
 - specfunc.finc, [917](#)
- fgsl_sf_hermite_func_array
 - specfunc.finc, [918](#)
- fgsl_sf_hermite_func_e
 - specfunc.finc, [865](#)
- fgsl_sf_hermite_func_fast
 - specfunc.finc, [918](#)
- fgsl_sf_hermite_func_fast_e
 - specfunc.finc, [865](#)
- fgsl_sf_hermite_func_series
 - specfunc.finc, [918](#)
- fgsl_sf_hermite_func_series_e
 - specfunc.finc, [865](#)
- fgsl_sf_hermite_phys
 - specfunc.finc, [918](#)
- fgsl_sf_hermite_phys_array
 - specfunc.finc, [918](#)
- fgsl_sf_hermite_phys_e
 - specfunc.finc, [865](#)
- fgsl_sf_hermite_phys_series
 - specfunc.finc, [918](#)
- fgsl_sf_hermite_phys_series_e
 - specfunc.finc, [866](#)
- fgsl_sf_hermite_prob
 - specfunc.finc, [919](#)
- fgsl_sf_hermite_prob_array
 - specfunc.finc, [919](#)
- fgsl_sf_hermite_prob_array_deriv
 - specfunc.finc, [919](#)
- fgsl_sf_hermite_prob_deriv
 - specfunc.finc, [919](#)
- fgsl_sf_hermite_prob_deriv_array
 - specfunc.finc, [919](#)
- fgsl_sf_hermite_prob_deriv_e
 - specfunc.finc, [866](#)
- fgsl_sf_hermite_prob_e
 - specfunc.finc, [866](#)
- fgsl_sf_hermite_prob_series
 - specfunc.finc, [920](#)
- fgsl_sf_hermite_prob_series_e
 - specfunc.finc, [866](#)
- fgsl_sf_hermite_prob_zero
 - specfunc.finc, [920](#)
- fgsl_sf_hermite_prob_zero_e
 - specfunc.finc, [866](#)
- fgsl_sf_hermite_series
 - specfunc.finc, [920](#)
- fgsl_sf_hermite_series_e
 - specfunc.finc, [867](#)
- fgsl_sf_hermite_zero
 - specfunc.finc, [920](#)
- fgsl_sf_hermite_zero_e
 - specfunc.finc, [867](#)
- fgsl_sf_hydrogenic
 - specfunc.finc, [920](#)
- fgsl_sf_hydrogenic_1
 - specfunc.finc, [920](#)
- fgsl_sf_hydrogenic_1_e
 - specfunc.finc, [867](#)
- fgsl_sf_hydrogenic_e
 - specfunc.finc, [867](#)
- fgsl_sf_hyperg_0f1
 - specfunc.finc, [921](#)
- fgsl_sf_hyperg_0f1_e
 - specfunc.finc, [867](#)
- fgsl_sf_hyperg_1f1
 - specfunc.finc, [921](#)
- fgsl_sf_hyperg_1f1_e
 - specfunc.finc, [868](#)
- fgsl_sf_hyperg_1f1_int
 - specfunc.finc, [921](#)
- fgsl_sf_hyperg_1f1_int_e
 - specfunc.finc, [868](#)
- fgsl_sf_hyperg_2f0
 - specfunc.finc, [921](#)
- fgsl_sf_hyperg_2f0_e
 - specfunc.finc, [868](#)
- fgsl_sf_hyperg_2f1
 - specfunc.finc, [921](#)
- fgsl_sf_hyperg_2f1_conj
 - specfunc.finc, [921](#)
- fgsl_sf_hyperg_2f1_conj_e
 - specfunc.finc, [868](#)
- fgsl_sf_hyperg_2f1_conj_renorm
 - specfunc.finc, [922](#)
- fgsl_sf_hyperg_2f1_conj_renorm_e
 - specfunc.finc, [868](#)
- fgsl_sf_hyperg_2f1_e
 - specfunc.finc, [869](#)
- fgsl_sf_hyperg_2f1_renorm
 - specfunc.finc, [922](#)
- fgsl_sf_hyperg_2f1_renorm_e
 - specfunc.finc, [869](#)
- fgsl_sf_hyperg_u
 - specfunc.finc, [922](#)
- fgsl_sf_hyperg_u_e
 - specfunc.finc, [869](#)
- fgsl_sf_hyperg_u_e10_e
 - specfunc.finc, [869](#)
- fgsl_sf_hyperg_u_int
 - specfunc.finc, [922](#)
- fgsl_sf_hyperg_u_int_e
 - specfunc.finc, [869](#)
- fgsl_sf_hyperg_u_int_e10_e

- specfunc.finc, [870](#)
- fgsl_sf_hypot
 - specfunc.finc, [922](#)
- fgsl_sf_hypot_e
 - specfunc.finc, [870](#)
- fgsl_sf_hzeta
 - specfunc.finc, [923](#)
- fgsl_sf_hzeta_e
 - specfunc.finc, [870](#)
- fgsl_sf_laguerre_1
 - specfunc.finc, [923](#)
- fgsl_sf_laguerre_1_e
 - specfunc.finc, [870](#)
- fgsl_sf_laguerre_2
 - specfunc.finc, [923](#)
- fgsl_sf_laguerre_2_e
 - specfunc.finc, [870](#)
- fgsl_sf_laguerre_3
 - specfunc.finc, [923](#)
- fgsl_sf_laguerre_3_e
 - specfunc.finc, [871](#)
- fgsl_sf_laguerre_n
 - specfunc.finc, [923](#)
- fgsl_sf_laguerre_n_e
 - specfunc.finc, [871](#)
- fgsl_sf_lambert_w0
 - specfunc.finc, [923](#)
- fgsl_sf_lambert_w0_e
 - specfunc.finc, [871](#)
- fgsl_sf_lambert_wm1
 - specfunc.finc, [924](#)
- fgsl_sf_lambert_wm1_e
 - specfunc.finc, [871](#)
- fgsl_sf_legendre_array
 - specfunc.finc, [871](#)
- fgsl_sf_legendre_array_e
 - specfunc.finc, [871](#)
- fgsl_sf_legendre_array_index
 - specfunc.finc, [924](#)
- fgsl_sf_legendre_array_n
 - specfunc.finc, [924](#)
- fgsl_sf_legendre_deriv2_alt_array
 - specfunc.finc, [872](#)
- fgsl_sf_legendre_deriv2_alt_array_e
 - specfunc.finc, [872](#)
- fgsl_sf_legendre_deriv2_array
 - specfunc.finc, [872](#)
- fgsl_sf_legendre_deriv2_array_e
 - specfunc.finc, [872](#)
- fgsl_sf_legendre_deriv_alt_array
 - specfunc.finc, [873](#)
- fgsl_sf_legendre_deriv_alt_array_e
 - specfunc.finc, [873](#)
- fgsl_sf_legendre_deriv_array
 - specfunc.finc, [873](#)
- fgsl_sf_legendre_deriv_array_e
 - specfunc.finc, [873](#)
- fgsl_sf_legendre_full
 - fgsl, [173](#)
- fgsl_sf_legendre_h3d
 - specfunc.finc, [924](#)
- fgsl_sf_legendre_h3d_0
 - specfunc.finc, [924](#)
- fgsl_sf_legendre_h3d_0_e
 - specfunc.finc, [874](#)
- fgsl_sf_legendre_h3d_1
 - specfunc.finc, [924](#)
- fgsl_sf_legendre_h3d_1_e
 - specfunc.finc, [874](#)
- fgsl_sf_legendre_h3d_array
 - specfunc.finc, [874](#)
- fgsl_sf_legendre_h3d_e
 - specfunc.finc, [874](#)
- fgsl_sf_legendre_nlm
 - specfunc.finc, [925](#)
- fgsl_sf_legendre_none
 - fgsl, [173](#)
- fgsl_sf_legendre_p1
 - specfunc.finc, [925](#)
- fgsl_sf_legendre_p1_e
 - specfunc.finc, [874](#)
- fgsl_sf_legendre_p2
 - specfunc.finc, [925](#)
- fgsl_sf_legendre_p2_e
 - specfunc.finc, [875](#)
- fgsl_sf_legendre_p3
 - specfunc.finc, [925](#)
- fgsl_sf_legendre_p3_e
 - specfunc.finc, [875](#)
- fgsl_sf_legendre_pl
 - specfunc.finc, [925](#)
- fgsl_sf_legendre_pl_array
 - specfunc.finc, [875](#)
- fgsl_sf_legendre_pl_deriv_array
 - specfunc.finc, [875](#)
- fgsl_sf_legendre_pl_e
 - specfunc.finc, [875](#)
- fgsl_sf_legendre_plm
 - specfunc.finc, [925](#)
- fgsl_sf_legendre_plm_e
 - specfunc.finc, [875](#)
- fgsl_sf_legendre_q0
 - specfunc.finc, [926](#)
- fgsl_sf_legendre_q0_e
 - specfunc.finc, [876](#)
- fgsl_sf_legendre_q1
 - specfunc.finc, [926](#)
- fgsl_sf_legendre_q1_e
 - specfunc.finc, [876](#)
- fgsl_sf_legendre_ql
 - specfunc.finc, [926](#)
- fgsl_sf_legendre_ql_e
 - specfunc.finc, [876](#)
- fgsl_sf_legendre_schmidt
 - fgsl, [173](#)
- fgsl_sf_legendre_spharm

- fgsl, [173](#)
- fgsl_sf_legendre_sphplm
 - specfunc.finc, [926](#)
- fgsl_sf_legendre_sphplm_e
 - specfunc.finc, [876](#)
- fgsl_sf_Inbeta
 - specfunc.finc, [926](#)
- fgsl_sf_Inbeta_e
 - specfunc.finc, [876](#)
- fgsl_sf_Inchoose
 - specfunc.finc, [926](#)
- fgsl_sf_Inchoose_e
 - specfunc.finc, [876](#)
- fgsl_sf_Incosh
 - specfunc.finc, [927](#)
- fgsl_sf_Incosh_e
 - specfunc.finc, [877](#)
- fgsl_sf_Indoublefact
 - specfunc.finc, [927](#)
- fgsl_sf_Indoublefact_e
 - specfunc.finc, [877](#)
- fgsl_sf_Infact
 - specfunc.finc, [927](#)
- fgsl_sf_Infact_e
 - specfunc.finc, [877](#)
- fgsl_sf_Ingamma
 - specfunc.finc, [927](#)
- fgsl_sf_Ingamma_complex_e
 - specfunc.finc, [877](#)
- fgsl_sf_Ingamma_e
 - specfunc.finc, [877](#)
- fgsl_sf_Ingamma_sgn_e
 - specfunc.finc, [877](#)
- fgsl_sf_Inpoch
 - specfunc.finc, [927](#)
- fgsl_sf_Inpoch_e
 - specfunc.finc, [878](#)
- fgsl_sf_Inpoch_sgn_e
 - specfunc.finc, [878](#)
- fgsl_sf_Insinh
 - specfunc.finc, [927](#)
- fgsl_sf_Insinh_e
 - specfunc.finc, [878](#)
- fgsl_sf_log
 - specfunc.finc, [927](#)
- fgsl_sf_log_1plusx
 - specfunc.finc, [928](#)
- fgsl_sf_log_1plusx_e
 - specfunc.finc, [878](#)
- fgsl_sf_log_1plusx_mx
 - specfunc.finc, [928](#)
- fgsl_sf_log_1plusx_mx_e
 - specfunc.finc, [878](#)
- fgsl_sf_log_abs
 - specfunc.finc, [928](#)
- fgsl_sf_log_abs_e
 - specfunc.finc, [878](#)
- fgsl_sf_log_e
 - specfunc.finc, [879](#)
- fgsl_sf_log_erfc
 - specfunc.finc, [928](#)
- fgsl_sf_log_erfc_e
 - specfunc.finc, [879](#)
- fgsl_sf_mathieu_a
 - specfunc.finc, [928](#)
- fgsl_sf_mathieu_a_array
 - specfunc.finc, [879](#)
- fgsl_sf_mathieu_a_coeff
 - specfunc.finc, [928](#)
- fgsl_sf_mathieu_a_e
 - specfunc.finc, [879](#)
- fgsl_sf_mathieu_alloc
 - specfunc.finc, [879](#)
- fgsl_sf_mathieu_b
 - specfunc.finc, [929](#)
- fgsl_sf_mathieu_b_array
 - specfunc.finc, [879](#)
- fgsl_sf_mathieu_b_coeff
 - specfunc.finc, [929](#)
- fgsl_sf_mathieu_b_e
 - specfunc.finc, [880](#)
- fgsl_sf_mathieu_ce
 - specfunc.finc, [929](#)
- fgsl_sf_mathieu_ce_array
 - specfunc.finc, [880](#)
- fgsl_sf_mathieu_ce_e
 - specfunc.finc, [880](#)
- fgsl_sf_mathieu_free
 - specfunc.finc, [880](#)
- fgsl_sf_mathieu_mc
 - specfunc.finc, [929](#)
- fgsl_sf_mathieu_mc_array
 - specfunc.finc, [880](#)
- fgsl_sf_mathieu_mc_e
 - specfunc.finc, [881](#)
- fgsl_sf_mathieu_ms
 - specfunc.finc, [929](#)
- fgsl_sf_mathieu_ms_array
 - specfunc.finc, [881](#)
- fgsl_sf_mathieu_ms_e
 - specfunc.finc, [881](#)
- fgsl_sf_mathieu_se
 - specfunc.finc, [930](#)
- fgsl_sf_mathieu_se_array
 - specfunc.finc, [881](#)
- fgsl_sf_mathieu_se_e
 - specfunc.finc, [882](#)
- fgsl_sf_multiply_e
 - specfunc.finc, [882](#)
- fgsl_sf_multiply_err_e
 - specfunc.finc, [882](#)
- fgsl_sf_poch
 - specfunc.finc, [930](#)
- fgsl_sf_poch_e
 - specfunc.finc, [882](#)
- fgsl_sf_pochrel

- specfunc.finc, 930
- fgsl_sf_pochrel_e
 - specfunc.finc, 882
- fgsl_sf_polar_to_rect
 - specfunc.finc, 883
- fgsl_sf_psi
 - specfunc.finc, 930
- fgsl_sf_psi_1
 - specfunc.finc, 930
- fgsl_sf_psi_1_e
 - specfunc.finc, 883
- fgsl_sf_psi_1_int
 - specfunc.finc, 930
- fgsl_sf_psi_1_int_e
 - specfunc.finc, 883
- fgsl_sf_psi_1piy
 - specfunc.finc, 931
- fgsl_sf_psi_1piy_e
 - specfunc.finc, 883
- fgsl_sf_psi_e
 - specfunc.finc, 883
- fgsl_sf_psi_int
 - specfunc.finc, 931
- fgsl_sf_psi_int_e
 - specfunc.finc, 883
- fgsl_sf_psi_n
 - specfunc.finc, 931
- fgsl_sf_psi_n_e
 - specfunc.finc, 884
- fgsl_sf_rect_to_polar
 - specfunc.finc, 884
- fgsl_sf_shi
 - specfunc.finc, 931
- fgsl_sf_shi_e
 - specfunc.finc, 884
- fgsl_sf_si
 - specfunc.finc, 931
- fgsl_sf_si_e
 - specfunc.finc, 884
- fgsl_sf_sin_err_e
 - specfunc.finc, 884
- fgsl_sf_sinc
 - specfunc.finc, 931
- fgsl_sf_sinc_e
 - specfunc.finc, 884
- fgsl_sf_synchrotron_1
 - specfunc.finc, 931
- fgsl_sf_synchrotron_1_e
 - specfunc.finc, 885
- fgsl_sf_synchrotron_2
 - specfunc.finc, 932
- fgsl_sf_synchrotron_2_e
 - specfunc.finc, 885
- fgsl_sf_taylorcoeff
 - specfunc.finc, 932
- fgsl_sf_taylorcoeff_e
 - specfunc.finc, 885
- fgsl_sf_transport_2
 - specfunc.finc, 932
- fgsl_sf_transport_2_e
 - specfunc.finc, 885
- fgsl_sf_transport_3
 - specfunc.finc, 932
- fgsl_sf_transport_3_e
 - specfunc.finc, 885
- fgsl_sf_transport_4
 - specfunc.finc, 932
- fgsl_sf_transport_4_e
 - specfunc.finc, 885
- fgsl_sf_transport_5
 - specfunc.finc, 932
- fgsl_sf_transport_5_e
 - specfunc.finc, 886
- fgsl_sf_zeta
 - specfunc.finc, 932
- fgsl_sf_zeta_e
 - specfunc.finc, 886
- fgsl_sf_zeta_int
 - specfunc.finc, 933
- fgsl_sf_zeta_int_e
 - specfunc.finc, 886
- fgsl_sf_zetam1
 - specfunc.finc, 933
- fgsl_sf_zetam1_e
 - specfunc.finc, 886
- fgsl_sf_zetam1_int
 - specfunc.finc, 933
- fgsl_sf_zetam1_int_e
 - specfunc.finc, 886
- fgsl_siman_params_free
 - siman.finc, 815
- fgsl_siman_params_init
 - siman.finc, 815
- fgsl_siman_params_t_status
 - fgsl_well_defined, 273
 - siman.finc, 815
- fgsl_siman_solve
 - siman.finc, 815
- fgsl_size_t
 - fgsl, 173
- fgsl_sizeof, 249
 - fgsl_sizeof_char, 249
 - fgsl_sizeof_combination, 249
 - fgsl_sizeof_double, 250
 - fgsl_sizeof_float, 250
 - fgsl_sizeof_int, 250
 - fgsl_sizeof_integration_qawo_table, 250
 - fgsl_sizeof_integration_qaws_table, 250
 - fgsl_sizeof_integration_workspace, 250
 - fgsl_sizeof_interp, 250
 - fgsl_sizeof_matrix, 250
 - fgsl_sizeof_matrix_complex, 251
 - fgsl_sizeof_multiset, 251
 - fgsl_sizeof_permutation, 251
 - fgsl_sizeof_size_t, 251
 - fgsl_sizeof_vector, 251

- fgsl_sizeof_vector_complex, [251](#)
- fgsl_sizeof_wavelet, [251](#)
- fgsl_sizeof_wavelet_workspace, [251](#)
- fgsl_sizeof_char
 - fgsl_sizeof, [249](#)
 - misc.finc, [549](#)
- fgsl_sizeof_combination
 - fgsl_sizeof, [249](#)
 - permutation.finc, [701](#)
- fgsl_sizeof_double
 - fgsl_sizeof, [250](#)
 - misc.finc, [549](#)
- fgsl_sizeof_float
 - fgsl_sizeof, [250](#)
 - misc.finc, [549](#)
- fgsl_sizeof_int
 - fgsl_sizeof, [250](#)
 - misc.finc, [549](#)
- fgsl_sizeof_integration_qawo_table
 - fgsl_sizeof, [250](#)
 - integration.finc, [410](#)
- fgsl_sizeof_integration_qaws_table
 - fgsl_sizeof, [250](#)
 - integration.finc, [410](#)
- fgsl_sizeof_integration_workspace
 - fgsl_sizeof, [250](#)
 - integration.finc, [410](#)
- fgsl_sizeof_interp
 - fgsl_sizeof, [250](#)
 - interp.finc, [430](#)
- fgsl_sizeof_long
 - misc.finc, [549](#)
- fgsl_sizeof_matrix
 - array.finc, [285](#)
 - fgsl_sizeof, [250](#)
- fgsl_sizeof_matrix_complex
 - array.finc, [285](#)
 - fgsl_sizeof, [251](#)
- fgsl_sizeof_multiset
 - fgsl_sizeof, [251](#)
 - permutation.finc, [701](#)
- fgsl_sizeof_permutation
 - fgsl_sizeof, [251](#)
 - permutation.finc, [701](#)
- fgsl_sizeof_size_t
 - fgsl_sizeof, [251](#)
 - misc.finc, [549](#)
- fgsl_sizeof_vector
 - array.finc, [286](#)
 - fgsl_sizeof, [251](#)
- fgsl_sizeof_vector_complex
 - array.finc, [286](#)
 - fgsl_sizeof, [251](#)
- fgsl_sizeof_wavelet
 - fgsl_sizeof, [251](#)
 - wavelet.finc, [1029](#)
- fgsl_sizeof_wavelet_workspace
 - fgsl_sizeof, [251](#)
- wavelet.finc, [1029](#)
- fgsl_sort, [252](#)
 - fgsl_sort2_double, [252](#)
 - fgsl_sort_double, [252](#)
 - fgsl_sort_long, [252](#)
 - fgsl_sort_vector, [252](#)
 - fgsl_sort_vector2, [252](#)
- fgsl_sort2_double
 - fgsl_sort, [252](#)
 - sort.finc, [818](#)
- fgsl_sort_double
 - fgsl_sort, [252](#)
 - sort.finc, [818](#)
- fgsl_sort_double_index
 - fgsl_sort_index, [253](#)
 - sort.finc, [818](#)
- fgsl_sort_double_largest
 - fgsl_sort_largest, [254](#)
 - sort.finc, [818](#)
- fgsl_sort_double_largest_index
 - fgsl_sort_largest_index, [254](#)
 - sort.finc, [819](#)
- fgsl_sort_double_smallest
 - fgsl_sort_smallest, [255](#)
 - sort.finc, [819](#)
- fgsl_sort_double_smallest_index
 - fgsl_sort_smallest_index, [256](#)
 - sort.finc, [819](#)
- fgsl_sort_index, [253](#)
 - fgsl_sort_double_index, [253](#)
 - fgsl_sort_long_index, [253](#)
 - fgsl_sort_vector_index, [253](#)
- fgsl_sort_largest, [253](#)
 - fgsl_sort_double_largest, [254](#)
 - fgsl_sort_long_largest, [254](#)
 - fgsl_sort_vector_largest, [254](#)
- fgsl_sort_largest_index, [254](#)
 - fgsl_sort_double_largest_index, [254](#)
 - fgsl_sort_long_largest_index, [254](#)
 - fgsl_sort_vector_largest_index, [255](#)
- fgsl_sort_long
 - fgsl_sort, [252](#)
 - sort.finc, [819](#)
- fgsl_sort_long_index
 - fgsl_sort_index, [253](#)
 - sort.finc, [819](#)
- fgsl_sort_long_largest
 - fgsl_sort_largest, [254](#)
 - sort.finc, [820](#)
- fgsl_sort_long_largest_index
 - fgsl_sort_largest_index, [254](#)
 - sort.finc, [820](#)
- fgsl_sort_long_smallest
 - fgsl_sort_smallest, [255](#)
 - sort.finc, [820](#)
- fgsl_sort_long_smallest_index
 - fgsl_sort_smallest_index, [256](#)
 - sort.finc, [820](#)

- fgsl_sort_smallest, 255
 - fgsl_sort_double_smallest, 255
 - fgsl_sort_long_smallest, 255
 - fgsl_sort_vector_smallest, 255
- fgsl_sort_smallest_index, 256
 - fgsl_sort_double_smallest_index, 256
 - fgsl_sort_long_smallest_index, 256
 - fgsl_sort_vector_smallest_index, 256
- fgsl_sort_vector
 - fgsl_sort, 252
 - sort.finc, 820
- fgsl_sort_vector2
 - fgsl_sort, 252
 - sort.finc, 821
- fgsl_sort_vector_index
 - fgsl_sort_index, 253
 - sort.finc, 821
- fgsl_sort_vector_largest
 - fgsl_sort_largest, 254
 - sort.finc, 821
- fgsl_sort_vector_largest_index
 - fgsl_sort_largest_index, 255
 - sort.finc, 821
- fgsl_sort_vector_smallest
 - fgsl_sort_smallest, 255
 - sort.finc, 821
- fgsl_sort_vector_smallest_index
 - fgsl_sort_smallest_index, 256
 - sort.finc, 821
- fgsl_spblas_dgemm
 - spmatrix.finc, 991
- fgsl_spblas_dgemv
 - spmatrix.finc, 991
- fgslSplinalg_itersolve_alloc
 - splinalg.finc, 987
- fgslSplinalg_itersolve_free
 - splinalg.finc, 987
- fgslSplinalg_itersolve_gmres
 - fgsl, 173
- fgslSplinalg_itersolve_iterate
 - splinalg.finc, 988
- fgslSplinalg_itersolve_name
 - splinalg.finc, 988
- fgslSplinalg_itersolve_normr
 - splinalg.finc, 988
- fgsl_spline2d_alloc
 - interp.finc, 430
- fgsl_spline2d_eval
 - interp.finc, 430
- fgsl_spline2d_eval_deriv_x
 - interp.finc, 431
- fgsl_spline2d_eval_deriv_x_e
 - interp.finc, 431
- fgsl_spline2d_eval_deriv_xx
 - interp.finc, 431
- fgsl_spline2d_eval_deriv_xx_e
 - interp.finc, 431
- fgsl_spline2d_eval_deriv_xy
 - interp.finc, 431
- fgsl_spline2d_eval_deriv_xy_e
 - interp.finc, 432
- fgsl_spline2d_eval_deriv_y
 - interp.finc, 432
- fgsl_spline2d_eval_deriv_y_e
 - interp.finc, 432
- fgsl_spline2d_eval_deriv_yy
 - interp.finc, 432
- fgsl_spline2d_eval_deriv_yy_e
 - interp.finc, 432
- fgsl_spline2d_eval_e
 - interp.finc, 433
- fgsl_spline2d_eval_extrap
 - interp.finc, 433
- fgsl_spline2d_eval_extrap_e
 - interp.finc, 433
- fgsl_spline2d_free
 - interp.finc, 433
- fgsl_spline2d_get
 - interp.finc, 433
- fgsl_spline2d_init
 - interp.finc, 434
- fgsl_spline2d_min_size
 - interp.finc, 434
- fgsl_spline2d_name
 - interp.finc, 434
- fgsl_spline2d_set
 - interp.finc, 434
- fgsl_spline2d_status
 - fgsl_well_defined, 273
 - interp.finc, 434
- fgsl_spline_alloc
 - interp.finc, 434
- fgsl_spline_eval
 - interp.finc, 435
- fgsl_spline_eval_deriv
 - interp.finc, 435
- fgsl_spline_eval_deriv2
 - interp.finc, 435
- fgsl_spline_eval_deriv2_e
 - interp.finc, 435
- fgsl_spline_eval_deriv_e
 - interp.finc, 435
- fgsl_spline_eval_e
 - interp.finc, 436
- fgsl_spline_eval_integ
 - interp.finc, 436
- fgsl_spline_eval_integ_e
 - interp.finc, 436
- fgsl_spline_free
 - interp.finc, 436
- fgsl_spline_init
 - interp.finc, 436
- fgsl_spline_min_size
 - interp.finc, 437
- fgsl_spline_name
 - interp.finc, 437

fgsl_spline_status
 fgsl_well_defined, 273
 interp.finc, 437
fgsl_spmatrix_add
 spmatrix.finc, 991
fgsl_spmatrix_add_to_dense
 spmatrix.finc, 991
fgsl_spmatrix_alloc
 spmatrix.finc, 991
fgsl_spmatrix_alloc_nzmax
 spmatrix.finc, 991
fgsl_spmatrix_ccs
 fgsl, 173
fgsl_spmatrix_compcol
 spmatrix.finc, 992
fgsl_spmatrix_compress
 spmatrix.finc, 992
fgsl_spmatrix_crs
 fgsl, 174
fgsl_spmatrix_csc
 spmatrix.finc, 992
fgsl_spmatrix_csr
 spmatrix.finc, 992
fgsl_spmatrix_cumsum
 spmatrix.finc, 992
fgsl_spmatrix_d2sp
 spmatrix.finc, 992
fgsl_spmatrix_dense_add
 spmatrix.finc, 993
fgsl_spmatrix_dense_sub
 spmatrix.finc, 993
fgsl_spmatrix_equal
 spmatrix.finc, 993
fgsl_spmatrix_fprintf
 spmatrix.finc, 993
fgsl_spmatrix_fread
 spmatrix.finc, 993
fgsl_spmatrix_free
 spmatrix.finc, 993
fgsl_spmatrix_fscanf
 spmatrix.finc, 994
fgsl_spmatrix_fwrite
 spmatrix.finc, 994
fgsl_spmatrix_get
 spmatrix.finc, 994
fgsl_spmatrix_getfields
 spmatrix.finc, 994
fgsl_spmatrix_memcpy
 spmatrix.finc, 994
fgsl_spmatrix_min_index
 spmatrix.finc, 994
fgsl_spmatrix_minmax
 spmatrix.finc, 995
fgsl_spmatrix_nnz
 spmatrix.finc, 995
fgsl_spmatrix_norm1
 spmatrix.finc, 995
fgsl_spmatrix_realloc
 spmatrix.finc, 995
fgsl_spmatrix_scale
 spmatrix.finc, 995
fgsl_spmatrix_scale_columns
 spmatrix.finc, 995
fgsl_spmatrix_scale_rows
 spmatrix.finc, 996
fgsl_spmatrix_set
 spmatrix.finc, 996
fgsl_spmatrix_set_zero
 spmatrix.finc, 996
fgsl_spmatrix_size
 spmatrix.finc, 996
fgsl_spmatrix_sp2d
 spmatrix.finc, 996
fgsl_spmatrix_transpose
 spmatrix.finc, 996
fgsl_spmatrix_transpose_memcpy
 spmatrix.finc, 997
fgsl_spmatrix_triplet
 fgsl, 174
fgsl_spmatrix_type_coo
 fgsl, 174
fgsl_spmatrix_type_csc
 fgsl, 174
fgsl_spmatrix_type_csr
 fgsl, 174
fgsl_stats_absdev
 statistics.finc, 1005
fgsl_stats_absdev_m
 statistics.finc, 1006
fgsl_stats_correlation
 statistics.finc, 1006
fgsl_stats_covariance
 statistics.finc, 1006
fgsl_stats_covariance_m
 statistics.finc, 1006
fgsl_stats_gastwirth_from_sorted_data
 statistics.finc, 1015
fgsl_stats_kurtosis
 statistics.finc, 1006
fgsl_stats_kurtosis_m_sd
 statistics.finc, 1007
fgsl_stats_lag1_autocorrelation
 statistics.finc, 1007
fgsl_stats_lag1_autocorrelation_m
 statistics.finc, 1007
fgsl_stats_mad
 statistics.finc, 1015
fgsl_stats_mad0
 statistics.finc, 1016
fgsl_stats_max
 statistics.finc, 1007
fgsl_stats_max_index
 statistics.finc, 1007
fgsl_stats_mean
 statistics.finc, 1008
fgsl_stats_median

- statistics.finc, [1016](#)
- fgsl_stats_median_from_sorted_data
 - statistics.finc, [1008](#)
- fgsl_stats_min
 - statistics.finc, [1008](#)
- fgsl_stats_min_index
 - statistics.finc, [1008](#)
- fgsl_stats_minmax
 - statistics.finc, [1008](#)
- fgsl_stats_minmax_index
 - statistics.finc, [1009](#)
- fgsl_stats_qn0_from_sorted_data
 - statistics.finc, [1016](#)
- fgsl_stats_qn_from_sorted_data
 - statistics.finc, [1016](#)
- fgsl_stats_quantile_from_sorted_data
 - statistics.finc, [1009](#)
- fgsl_stats_sd
 - statistics.finc, [1009](#)
- fgsl_stats_sd_m
 - statistics.finc, [1009](#)
- fgsl_stats_sd_with_fixed_mean
 - statistics.finc, [1009](#)
- fgsl_stats_select
 - statistics.finc, [1016](#)
- fgsl_stats_skew
 - statistics.finc, [1010](#)
- fgsl_stats_skew_m_sd
 - statistics.finc, [1010](#)
- fgsl_stats_sn0_from_sorted_data
 - statistics.finc, [1017](#)
- fgsl_stats_sn_from_sorted_data
 - statistics.finc, [1017](#)
- fgsl_stats_spearman
 - statistics.finc, [1010](#)
- fgsl_stats_trmean_from_sorted_data
 - statistics.finc, [1017](#)
- fgsl_stats_variance
 - statistics.finc, [1010](#)
- fgsl_stats_variance_m
 - statistics.finc, [1010](#)
- fgsl_stats_variance_with_fixed_mean
 - statistics.finc, [1011](#)
- fgsl_stats_wabsdev
 - statistics.finc, [1011](#)
- fgsl_stats_wabsdev_m
 - statistics.finc, [1011](#)
- fgsl_stats_wkurtosis
 - statistics.finc, [1011](#)
- fgsl_stats_wkurtosis_m_sd
 - statistics.finc, [1011](#)
- fgsl_stats_wmean
 - statistics.finc, [1012](#)
- fgsl_stats_wsd
 - statistics.finc, [1012](#)
- fgsl_stats_wsd_m
 - statistics.finc, [1012](#)
- fgsl_stats_wsd_with_fixed_mean
 - statistics.finc, [1012](#)
- fgsl_stats_wskew
 - statistics.finc, [1013](#)
- fgsl_stats_wskew_m_sd
 - statistics.finc, [1013](#)
- fgsl_stats_wvariance
 - statistics.finc, [1013](#)
- fgsl_stats_wvariance_m
 - statistics.finc, [1013](#)
- fgsl_stats_wvariance_with_fixed_mean
 - statistics.finc, [1014](#)
- fgsl_stderr
 - io.finc, [456](#)
- fgsl_stdin
 - io.finc, [456](#)
- fgsl_stdout
 - io.finc, [457](#)
- fgsl_strerror
 - error.finc, [344](#)
- fgsl_strmax
 - fgsl, [174](#)
- fgsl_success
 - fgsl, [174](#)
- fgsl_sum_levin_u_accel
 - sum_levin.finc, [1026](#)
- fgsl_sum_levin_u_alloc
 - sum_levin.finc, [1026](#)
- fgsl_sum_levin_u_free
 - sum_levin.finc, [1026](#)
- fgsl_sum_levin_ustrunc_accel
 - sum_levin.finc, [1026](#)
- fgsl_sum_levin_ustrunc_alloc
 - sum_levin.finc, [1026](#)
- fgsl_sum_levin_ustrunc_free
 - sum_levin.finc, [1026](#)
- fgsl_vector_align, [260](#)
 - array.finc, [286](#)
 - fgsl_vector_align, [260](#)
 - fgsl_vector_complex_align, [260](#)
 - fgsl_vector_complex_pointer_align, [260](#)
 - fgsl_vector_pointer_align, [260](#)
- fgsl_vector_c_ptr
 - array.finc, [287](#)
 - fgsl_obj_c_ptr, [232](#)
- fgsl_vector_complex_align
 - array.finc, [287](#)
 - fgsl_vector_align, [260](#)
- fgsl_vector_complex_c_ptr
 - array.finc, [287](#)
- fgsl_vector_complex_free
 - array.finc, [287](#)
 - fgsl_vector_free, [262](#)
- fgsl_vector_complex_init
 - array.finc, [288](#)
 - fgsl_vector_init, [262](#)
- fgsl_vector_complex_init_legacy
 - array.finc, [288](#)
 - fgsl_vector_init, [262](#)

`fgsl_vector_complex_pointer_align`
 `array.finc`, 288
 `fgsl_vector_align`, 260
`fgsl_vector_complex_status`
 `array.finc`, 289
 `fgsl_well_defined`, 273
`fgsl_vector_complex_to_array`
 `array.finc`, 289
 `assignment(=)`, 182
`fgsl_vector_complex_to_fptr`
 `array.finc`, 289
 `fgsl_vector_to_fptr`, 264
`fgsl_vector_free`, 261
 `array.finc`, 289
 `fgsl_vector_complex_free`, 262
 `fgsl_vector_free`, 261
 `fgsl_vector_int_free`, 262
`fgsl_vector_get_size`
 `array.finc`, 289
`fgsl_vector_get_stride`
 `array.finc`, 289
`fgsl_vector_init`, 262
 `array.finc`, 290
 `fgsl_vector_complex_init`, 262
 `fgsl_vector_complex_init_legacy`, 262
 `fgsl_vector_init`, 262
 `fgsl_vector_init_legacy`, 263
 `fgsl_vector_int_init`, 263
`fgsl_vector_init_legacy`
 `array.finc`, 290
 `fgsl_vector_init`, 263
`fgsl_vector_int_free`
 `array.finc`, 290
 `fgsl_vector_free`, 262
`fgsl_vector_int_init`
 `array.finc`, 290
 `fgsl_vector_init`, 263
`fgsl_vector_int_status`
 `array.finc`, 291
 `fgsl_well_defined`, 273
`fgsl_vector_int_to_fptr`
 `array.finc`, 291
 `fgsl_vector_to_fptr`, 264
`fgsl_vector_pointer_align`
 `array.finc`, 291
 `fgsl_vector_align`, 260
`fgsl_vector_status`
 `array.finc`, 291
 `fgsl_well_defined`, 273
`fgsl_vector_to_array`
 `array.finc`, 292
 `assignment(=)`, 182
`fgsl_vector_to_fptr`, 263
 `array.finc`, 292
 `fgsl_vector_complex_to_fptr`, 264
 `fgsl_vector_int_to_fptr`, 264
 `fgsl_vector_to_fptr`, 264
`fgsl_vegas_mode_importance`
 `fgsl`, 174
`fgsl_vegas_mode_importance_only`
 `fgsl`, 175
`fgsl_vegas_mode_stratified`
 `fgsl`, 175
`fgsl_version`
 `fgsl`, 175
`fgsl_wavelet2d_nstransform`
 `wavelet.finc`, 1029
`fgsl_wavelet2d_nstransform_forward`
 `wavelet.finc`, 1030
`fgsl_wavelet2d_nstransform_inverse`
 `wavelet.finc`, 1030
`fgsl_wavelet2d_nstransform_matrix`
 `wavelet.finc`, 1030
`fgsl_wavelet2d_nstransform_matrix_forward`
 `wavelet.finc`, 1030
`fgsl_wavelet2d_nstransform_matrix_inverse`
 `wavelet.finc`, 1030
`fgsl_wavelet2d_transform`
 `wavelet.finc`, 1031
`fgsl_wavelet2d_transform_forward`
 `wavelet.finc`, 1031
`fgsl_wavelet2d_transform_inverse`
 `wavelet.finc`, 1031
`fgsl_wavelet2d_transform_matrix`
 `wavelet.finc`, 1031
`fgsl_wavelet2d_transform_matrix_forward`
 `wavelet.finc`, 1031
`fgsl_wavelet2d_transform_matrix_inverse`
 `wavelet.finc`, 1032
`fgsl_wavelet_alloc`
 `wavelet.finc`, 1032
`fgsl_wavelet_bspline`
 `fgsl`, 175
`fgsl_wavelet_bspline_centered`
 `fgsl`, 175
`fgsl_wavelet_daubechies`
 `fgsl`, 175
`fgsl_wavelet_daubechies_centered`
 `fgsl`, 175
`fgsl_wavelet_free`
 `wavelet.finc`, 1032
`fgsl_wavelet_haar`
 `fgsl`, 175
`fgsl_wavelet_haar_centered`
 `fgsl`, 176
`fgsl_wavelet_name`
 `wavelet.finc`, 1032
`fgsl_wavelet_status`
 `fgsl_well_defined`, 274
 `wavelet.finc`, 1032
`fgsl_wavelet_transform`
 `wavelet.finc`, 1032
`fgsl_wavelet_transform_forward`
 `wavelet.finc`, 1033
`fgsl_wavelet_transform_inverse`
 `wavelet.finc`, 1033

- fgsl_wavelet_workspace_alloc
 - wavelet.finc, 1033
- fgsl_wavelet_workspace_free
 - wavelet.finc, 1033
- fgsl_wavelet_workspace_status
 - fgsl_well_defined, 274
 - wavelet.finc, 1033
- fgsl_well_defined, 266
 - fgsl_cheb_series_status, 267
 - fgsl_combination_status, 267
 - fgsl_dht_status, 267
 - fgsl_error_handler_status, 267
 - fgsl_file_status, 267
 - fgsl_histogram_status, 267
 - fgsl_integration_cquad_workspace_status, 267
 - fgsl_integration_glfixed_table_status, 268
 - fgsl_integration_qawo_table_status, 268
 - fgsl_integration_qaws_table_status, 268
 - fgsl_integration_workspace_status, 268
 - fgsl_interp2d_status, 268
 - fgsl_interp_accel_status, 268
 - fgsl_interp_status, 268
 - fgsl_matrix_complex_status, 268
 - fgsl_matrix_status, 269
 - fgsl_min_fminimizer_status, 269
 - fgsl_monte_function_status, 269
 - fgsl_monte_miser_status, 269
 - fgsl_monte_plain_status, 269
 - fgsl_monte_vegas_status, 269
 - fgsl_multifit_fdfsolver_status, 269
 - fgsl_multifit_fsolver_status, 269
 - fgsl_multifit_nlinear_status, 270
 - fgsl_multifit_status, 270
 - fgsl_multimin_fdfminimizer_status, 270
 - fgsl_multimin_fminimizer_status, 270
 - fgsl_multiroot_fdfsolver_status, 270
 - fgsl_multiroot_fsolver_status, 270
 - fgsl_multiset_status, 270
 - fgsl_ntuple_select_fn_status, 270
 - fgsl_ntuple_status, 271
 - fgsl_ntuple_value_fn_status, 271
 - fgsl_odeiv2_control_status, 271
 - fgsl_odeiv2_driver_status, 271
 - fgsl_odeiv2_evolve_status, 271
 - fgsl_odeiv2_step_status, 271
 - fgsl_odeiv2_system_status, 271
 - fgsl_odeiv_control_status, 271
 - fgsl_odeiv_evolve_status, 272
 - fgsl_odeiv_step_status, 272
 - fgsl_odeiv_system_status, 272
 - fgsl_permutation_status, 272
 - fgsl_poly_complex_workspace_stat, 272
 - fgsl_qrng_status, 272
 - fgsl_ran_discrete_t_status, 272
 - fgsl_rng_status, 272
 - fgsl_root_fdfsolver_status, 273
 - fgsl_root_fsolver_status, 273
 - fgsl_siman_params_t_status, 273
 - fgsl_spline2d_status, 273
 - fgsl_spline_status, 273
 - fgsl_vector_complex_status, 273
 - fgsl_vector_int_status, 273
 - fgsl_vector_status, 273
 - fgsl_wavelet_status, 274
 - fgsl_wavelet_workspace_status, 274
- filter.finc
 - fgsl_filter_gaussian, 358
 - fgsl_filter_gaussian_alloc, 358
 - fgsl_filter_gaussian_free, 359
 - fgsl_filter_gaussian_kernel, 359
 - fgsl_filter_impulse, 359
 - fgsl_filter_impulse_alloc, 359
 - fgsl_filter_impulse_free, 359
 - fgsl_filter_median, 360
 - fgsl_filter_median_alloc, 360
 - fgsl_filter_median_free, 360
 - fgsl_filter_rmedian, 360
 - fgsl_filter_rmedian_alloc, 360
 - fgsl_filter_rmedian_free, 360
 - gsl_filter_gaussian, 361
 - gsl_filter_gaussian_alloc, 361
 - gsl_filter_gaussian_free, 362
 - gsl_filter_gaussian_kernel, 362
 - gsl_filter_impulse, 362
 - gsl_filter_impulse_alloc, 362
 - gsl_filter_impulse_free, 362
 - gsl_filter_median, 363
 - gsl_filter_median_alloc, 363
 - gsl_filter_median_free, 363
 - gsl_filter_rmedian, 363
 - gsl_filter_rmedian_alloc, 363
 - gsl_filter_rmedian_free, 363
- fit.finc
 - fgsl_fit_linear, 364
 - fgsl_fit_linear_est, 364
 - fgsl_fit_mul, 364
 - fgsl_fit_mul_est, 365
 - fgsl_fit_wlinear, 365
 - fgsl_fit_wmul, 365
 - gsl_fit_linear, 366
 - gsl_fit_linear_est, 366
 - gsl_fit_mul, 367
 - gsl_fit_mul_est, 367
 - gsl_fit_wlinear, 367
 - gsl_fit_wmul, 367
- fopen
 - io.finc, 458
- function
 - fgsl::fgsl_movstat_function, 210
- gsl_acosh
 - math.finc, 540
- gsl_asinh
 - math.finc, 540
- gsl_atanh
 - math.finc, 540
- gsl_aux_integration_fixed_alloc

- integration.finc, [412](#)
- gsl_aux_sizeof_char
 - misc.finc, [550](#)
- gsl_aux_sizeof_combination
 - permutation.finc, [703](#)
- gsl_aux_sizeof_double
 - misc.finc, [550](#)
- gsl_aux_sizeof_float
 - misc.finc, [550](#)
- gsl_aux_sizeof_int
 - misc.finc, [551](#)
- gsl_aux_sizeof_integration_qawo_table
 - integration.finc, [412](#)
- gsl_aux_sizeof_integration_qaws_table
 - integration.finc, [412](#)
- gsl_aux_sizeof_integration_workspace
 - integration.finc, [412](#)
- gsl_aux_sizeof_interp
 - interp.finc, [439](#)
- gsl_aux_sizeof_long
 - misc.finc, [551](#)
- gsl_aux_sizeof_matrix
 - array.finc, [297](#)
- gsl_aux_sizeof_matrix_complex
 - array.finc, [297](#)
- gsl_aux_sizeof_multiset
 - permutation.finc, [703](#)
- gsl_aux_sizeof_permutation
 - permutation.finc, [703](#)
- gsl_aux_sizeof_size_t
 - misc.finc, [551](#)
- gsl_aux_sizeof_vector
 - array.finc, [297](#)
- gsl_aux_sizeof_vector_complex
 - array.finc, [297](#)
- gsl_aux_sizeof_wavelet
 - wavelet.finc, [1035](#)
- gsl_aux_sizeof_wavelet_workspace
 - wavelet.finc, [1035](#)
- gsl_aux_spmatrix_getfields
 - spmatrix.finc, [998](#)
- gsl_bspline_alloc
 - bspline.finc, [302](#)
- gsl_bspline_deriv_eval
 - bspline.finc, [302](#)
- gsl_bspline_deriv_eval_nonzero
 - bspline.finc, [302](#)
- gsl_bspline_eval
 - bspline.finc, [303](#)
- gsl_bspline_eval_nonzero
 - bspline.finc, [303](#)
- gsl_bspline_free
 - bspline.finc, [303](#)
- gsl_bspline_greville_abscissa
 - bspline.finc, [303](#)
- gsl_bspline_knots
 - bspline.finc, [303](#)
- gsl_bspline_knots_greville
 - bspline.finc, [304](#)
- gsl_bspline_knots_uniform
 - bspline.finc, [304](#)
- gsl_bspline_ncoeffs
 - bspline.finc, [304](#)
- gsl_bspline_workspace
 - fgsl::fgsl_bspline_workspace, [182](#)
- gsl_cdf_beta_p
 - rng.finc, [765](#)
- gsl_cdf_beta_pinv
 - rng.finc, [765](#)
- gsl_cdf_beta_q
 - rng.finc, [766](#)
- gsl_cdf_beta_qinv
 - rng.finc, [766](#)
- gsl_cdf_binomial_p
 - rng.finc, [766](#)
- gsl_cdf_binomial_q
 - rng.finc, [766](#)
- gsl_cdf_cauchy_p
 - rng.finc, [766](#)
- gsl_cdf_cauchy_pinv
 - rng.finc, [766](#)
- gsl_cdf_cauchy_q
 - rng.finc, [767](#)
- gsl_cdf_cauchy_qinv
 - rng.finc, [767](#)
- gsl_cdf_chisq_p
 - rng.finc, [767](#)
- gsl_cdf_chisq_pinv
 - rng.finc, [767](#)
- gsl_cdf_chisq_q
 - rng.finc, [767](#)
- gsl_cdf_chisq_qinv
 - rng.finc, [767](#)
- gsl_cdf_exponential_p
 - rng.finc, [768](#)
- gsl_cdf_exponential_pinv
 - rng.finc, [768](#)
- gsl_cdf_exponential_q
 - rng.finc, [768](#)
- gsl_cdf_exponential_qinv
 - rng.finc, [768](#)
- gsl_cdf_exppow_p
 - rng.finc, [768](#)
- gsl_cdf_exppow_q
 - rng.finc, [768](#)
- gsl_cdf_fdist_p
 - rng.finc, [769](#)
- gsl_cdf_fdist_pinv
 - rng.finc, [769](#)
- gsl_cdf_fdist_q
 - rng.finc, [769](#)
- gsl_cdf_fdist_qinv
 - rng.finc, [769](#)
- gsl_cdf_flat_p
 - rng.finc, [769](#)
- gsl_cdf_flat_pinv

rng.finc, [769](#)
 gsl_cdf_flat_q
 rng.finc, [770](#)
 gsl_cdf_flat_qinv
 rng.finc, [770](#)
 gsl_cdf_gamma_p
 rng.finc, [770](#)
 gsl_cdf_gamma_pinv
 rng.finc, [770](#)
 gsl_cdf_gamma_q
 rng.finc, [770](#)
 gsl_cdf_gamma_qinv
 rng.finc, [770](#)
 gsl_cdf_gaussian_p
 rng.finc, [771](#)
 gsl_cdf_gaussian_pinv
 rng.finc, [771](#)
 gsl_cdf_gaussian_q
 rng.finc, [771](#)
 gsl_cdf_gaussian_qinv
 rng.finc, [771](#)
 gsl_cdf_geometric_p
 rng.finc, [771](#)
 gsl_cdf_geometric_q
 rng.finc, [771](#)
 gsl_cdf_gumbel1_p
 rng.finc, [772](#)
 gsl_cdf_gumbel1_pinv
 rng.finc, [772](#)
 gsl_cdf_gumbel1_q
 rng.finc, [772](#)
 gsl_cdf_gumbel1_qinv
 rng.finc, [772](#)
 gsl_cdf_gumbel2_p
 rng.finc, [772](#)
 gsl_cdf_gumbel2_pinv
 rng.finc, [772](#)
 gsl_cdf_gumbel2_q
 rng.finc, [773](#)
 gsl_cdf_gumbel2_qinv
 rng.finc, [773](#)
 gsl_cdf_hypergeometric_p
 rng.finc, [773](#)
 gsl_cdf_hypergeometric_q
 rng.finc, [773](#)
 gsl_cdf_laplace_p
 rng.finc, [773](#)
 gsl_cdf_laplace_pinv
 rng.finc, [774](#)
 gsl_cdf_laplace_q
 rng.finc, [774](#)
 gsl_cdf_laplace_qinv
 rng.finc, [774](#)
 gsl_cdf_logistic_p
 rng.finc, [774](#)
 gsl_cdf_logistic_pinv
 rng.finc, [774](#)
 gsl_cdf_logistic_q
 rng.finc, [774](#)
 gsl_cdf_logistic_qinv
 rng.finc, [775](#)
 gsl_cdf_lognormal_p
 rng.finc, [775](#)
 gsl_cdf_lognormal_pinv
 rng.finc, [775](#)
 gsl_cdf_lognormal_q
 rng.finc, [775](#)
 gsl_cdf_lognormal_qinv
 rng.finc, [775](#)
 gsl_cdf_negative_binomial_p
 rng.finc, [775](#)
 gsl_cdf_negative_binomial_q
 rng.finc, [776](#)
 gsl_cdf_pareto_p
 rng.finc, [776](#)
 gsl_cdf_pareto_pinv
 rng.finc, [776](#)
 gsl_cdf_pareto_q
 rng.finc, [776](#)
 gsl_cdf_pareto_qinv
 rng.finc, [776](#)
 gsl_cdf_pascal_p
 rng.finc, [776](#)
 gsl_cdf_pascal_q
 rng.finc, [777](#)
 gsl_cdf_poisson_p
 rng.finc, [777](#)
 gsl_cdf_poisson_q
 rng.finc, [777](#)
 gsl_cdf_rayleigh_p
 rng.finc, [777](#)
 gsl_cdf_rayleigh_pinv
 rng.finc, [777](#)
 gsl_cdf_rayleigh_q
 rng.finc, [777](#)
 gsl_cdf_rayleigh_qinv
 rng.finc, [778](#)
 gsl_cdf_tdist_p
 rng.finc, [778](#)
 gsl_cdf_tdist_pinv
 rng.finc, [778](#)
 gsl_cdf_tdist_q
 rng.finc, [778](#)
 gsl_cdf_tdist_qinv
 rng.finc, [778](#)
 gsl_cdf_ugaussian_p
 rng.finc, [778](#)
 gsl_cdf_ugaussian_pinv
 rng.finc, [779](#)
 gsl_cdf_ugaussian_q
 rng.finc, [779](#)
 gsl_cdf_ugaussian_qinv
 rng.finc, [779](#)
 gsl_cdf_weibull_p
 rng.finc, [779](#)
 gsl_cdf_weibull_pinv

- rng.finc, 779
- gsl_cdf_weibull_q
 - rng.finc, 779
- gsl_cdf_weibull_qinv
 - rng.finc, 780
- gsl_chheb_alloc
 - chebyshev.finc, 307
- gsl_chheb_calc_deriv
 - chebyshev.finc, 307
- gsl_chheb_calc_integ
 - chebyshev.finc, 308
- gsl_chheb_coeffs
 - chebyshev.finc, 308
- gsl_chheb_eval
 - chebyshev.finc, 308
- gsl_chheb_eval_err
 - chebyshev.finc, 308
- gsl_chheb_eval_n
 - chebyshev.finc, 308
- gsl_chheb_eval_n_err
 - chebyshev.finc, 308
- gsl_chheb_free
 - chebyshev.finc, 309
- gsl_chheb_init
 - chebyshev.finc, 309
- gsl_chheb_order
 - chebyshev.finc, 309
- gsl_chheb_series
 - fgsl::fgsl_chheb_series, 183
- gsl_chheb_size
 - chebyshev.finc, 309
- gsl_combination
 - fgsl::fgsl_combination, 183
- gsl_combination_alloc
 - permutation.finc, 703
- gsl_combination_calloc
 - permutation.finc, 703
- gsl_combination_data
 - permutation.finc, 704
- gsl_combination_fprintf
 - permutation.finc, 704
- gsl_combination_fread
 - permutation.finc, 704
- gsl_combination_free
 - permutation.finc, 704
- gsl_combination_fscanf
 - permutation.finc, 704
- gsl_combination_fwrite
 - permutation.finc, 704
- gsl_combination_get
 - permutation.finc, 705
- gsl_combination_init_first
 - permutation.finc, 705
- gsl_combination_init_last
 - permutation.finc, 705
- gsl_combination_k
 - permutation.finc, 705
- gsl_combination_memcpy
 - permutation.finc, 705
- gsl_combination_n
 - permutation.finc, 705
- gsl_combination_next
 - permutation.finc, 706
- gsl_combination_prev
 - permutation.finc, 706
- gsl_combination_valid
 - permutation.finc, 706
- gsl_complex_arccos
 - complex.finc, 315
- gsl_complex_arccos_real
 - complex.finc, 315
- gsl_complex_arccosh
 - complex.finc, 315
- gsl_complex_arccosh_real
 - complex.finc, 315
- gsl_complex_arccot
 - complex.finc, 315
- gsl_complex_arccoth
 - complex.finc, 316
- gsl_complex_arccsc
 - complex.finc, 316
- gsl_complex_arccsc_real
 - complex.finc, 316
- gsl_complex_arccsch
 - complex.finc, 316
- gsl_complex_arcsec
 - complex.finc, 316
- gsl_complex_arcsec_real
 - complex.finc, 316
- gsl_complex_arcsech
 - complex.finc, 316
- gsl_complex_arcsin
 - complex.finc, 317
- gsl_complex_arcsin_real
 - complex.finc, 317
- gsl_complex_arcsinh
 - complex.finc, 317
- gsl_complex_arctan
 - complex.finc, 317
- gsl_complex_arctanh
 - complex.finc, 317
- gsl_complex_arctanh_real
 - complex.finc, 317
- gsl_complex_arg
 - complex.finc, 317
- gsl_complex_log10
 - complex.finc, 318
- gsl_complex_log_b
 - complex.finc, 318
- gsl_complex_logabs
 - complex.finc, 318
- gsl_complex_poly_complex_eval
 - poly.finc, 718
- gsl_deriv_backward
 - deriv.finc, 319
- gsl_deriv_central

- deriv.finc, 320
- gsl_deriv_forward
 - deriv.finc, 320
- gsl_dht
 - fgsl::fgsl_dht, 184
- gsl_dht_alloc
 - dht.finc, 322
- gsl_dht_apply
 - dht.finc, 323
- gsl_dht_free
 - dht.finc, 323
- gsl_dht_init
 - dht.finc, 323
- gsl_dht_k_sample
 - dht.finc, 323
- gsl_dht_new
 - dht.finc, 323
- gsl_dht_x_sample
 - dht.finc, 323
- gsl_eigen_gen
 - eigen.finc, 334
- gsl_eigen_gen_alloc
 - eigen.finc, 335
- gsl_eigen_gen_free
 - eigen.finc, 335
- gsl_eigen_gen_params
 - eigen.finc, 335
- gsl_eigen_gen_qz
 - eigen.finc, 335
- gsl_eigen_gen_workspace
 - fgsl::fgsl_eigen_gen_workspace, 184
- gsl_eigen_genherm
 - eigen.finc, 335
- gsl_eigen_genherm_alloc
 - eigen.finc, 336
- gsl_eigen_genherm_free
 - eigen.finc, 336
- gsl_eigen_genherm_workspace
 - fgsl::fgsl_eigen_genherm_workspace, 185
- gsl_eigen_genhermv
 - eigen.finc, 336
- gsl_eigen_genhermv_alloc
 - eigen.finc, 336
- gsl_eigen_genhermv_free
 - eigen.finc, 336
- gsl_eigen_genhermv_sort
 - eigen.finc, 336
- gsl_eigen_genhermv_workspace
 - fgsl::fgsl_eigen_genhermv_workspace, 185
- gsl_eigen_gensymm
 - eigen.finc, 337
- gsl_eigen_gensymm_alloc
 - eigen.finc, 337
- gsl_eigen_gensymm_free
 - eigen.finc, 337
- gsl_eigen_gensymm_workspace
 - fgsl::fgsl_eigen_gensymm_workspace, 185
- gsl_eigen_gensymmv
 - eigen.finc, 337
- gsl_eigen_gensymmv_alloc
 - eigen.finc, 337
- gsl_eigen_gensymmv_free
 - eigen.finc, 337
- gsl_eigen_gensymmv_sort
 - eigen.finc, 338
- gsl_eigen_gensymmv_workspace
 - fgsl::fgsl_eigen_gensymmv_workspace, 186
- gsl_eigen_genv
 - eigen.finc, 338
- gsl_eigen_genv_alloc
 - eigen.finc, 338
- gsl_eigen_genv_free
 - eigen.finc, 338
- gsl_eigen_genv_qz
 - eigen.finc, 338
- gsl_eigen_genv_sort
 - eigen.finc, 338
- gsl_eigen_genv_workspace
 - fgsl::fgsl_eigen_genv_workspace, 186
- gsl_eigen_herm
 - eigen.finc, 339
- gsl_eigen_herm_alloc
 - eigen.finc, 339
- gsl_eigen_herm_free
 - eigen.finc, 339
- gsl_eigen_herm_workspace
 - fgsl::fgsl_eigen_herm_workspace, 187
- gsl_eigen_hermv
 - eigen.finc, 339
- gsl_eigen_hermv_alloc
 - eigen.finc, 339
- gsl_eigen_hermv_free
 - eigen.finc, 339
- gsl_eigen_hermv_sort
 - eigen.finc, 340
- gsl_eigen_hermv_workspace
 - fgsl::fgsl_eigen_hermv_workspace, 187
- gsl_eigen_nonsymm
 - eigen.finc, 340
- gsl_eigen_nonsymm_alloc
 - eigen.finc, 340
- gsl_eigen_nonsymm_free
 - eigen.finc, 340
- gsl_eigen_nonsymm_params
 - eigen.finc, 340
- gsl_eigen_nonsymm_workspace
 - fgsl::fgsl_eigen_nonsymm_workspace, 188
- gsl_eigen_nonsymm_z
 - eigen.finc, 340
- gsl_eigen_nonsymmv
 - eigen.finc, 341
- gsl_eigen_nonsymmv_alloc
 - eigen.finc, 341
- gsl_eigen_nonsymmv_free
 - eigen.finc, 341
- gsl_eigen_nonsymmv_params

- eigen.finc, [341](#)
- gsl_eigen_nonsymmv_sort
 - eigen.finc, [341](#)
- gsl_eigen_nonsymmv_workspace
 - fgsl::fgsl_eigen_nonsymmv_workspace, [188](#)
- gsl_eigen_nonsymmv_z
 - eigen.finc, [341](#)
- gsl_eigen_symm
 - eigen.finc, [342](#)
- gsl_eigen_symm_alloc
 - eigen.finc, [342](#)
- gsl_eigen_symm_free
 - eigen.finc, [342](#)
- gsl_eigen_symm_workspace
 - fgsl::fgsl_eigen_symm_workspace, [188](#)
- gsl_eigen_symmv
 - eigen.finc, [342](#)
- gsl_eigen_symmv_alloc
 - eigen.finc, [342](#)
- gsl_eigen_symmv_free
 - eigen.finc, [342](#)
- gsl_eigen_symmv_sort
 - eigen.finc, [343](#)
- gsl_eigen_symmv_workspace
 - fgsl::fgsl_eigen_symmv_workspace, [189](#)
- gsl_error
 - error.finc, [345](#)
- gsl_error_handler_t
 - fgsl::fgsl_error_handler_t, [189](#)
- gsl_expm1
 - math.finc, [541](#)
- gsl_fcmp
 - math.finc, [541](#)
- gsl_fft_complex_backward
 - fft.finc, [353](#)
- gsl_fft_complex_forward
 - fft.finc, [353](#)
- gsl_fft_complex_inverse
 - fft.finc, [353](#)
- gsl_fft_complex_radix2_backward
 - fft.finc, [353](#)
- gsl_fft_complex_radix2_dif_backward
 - fft.finc, [353](#)
- gsl_fft_complex_radix2_dif_forward
 - fft.finc, [354](#)
- gsl_fft_complex_radix2_dif_inverse
 - fft.finc, [354](#)
- gsl_fft_complex_radix2_dif_transform
 - fft.finc, [354](#)
- gsl_fft_complex_radix2_forward
 - fft.finc, [354](#)
- gsl_fft_complex_radix2_inverse
 - fft.finc, [354](#)
- gsl_fft_complex_radix2_transform
 - fft.finc, [355](#)
- gsl_fft_complex_transform
 - fft.finc, [355](#)
- gsl_fft_complex_wavetable
 - fgsl::fgsl_fft_complex_wavetable, [190](#)
- gsl_fft_complex_wavetable_alloc
 - fft.finc, [355](#)
- gsl_fft_complex_wavetable_free
 - fft.finc, [355](#)
- gsl_fft_complex_workspace
 - fgsl::fgsl_fft_complex_workspace, [190](#)
- gsl_fft_complex_workspace_alloc
 - fft.finc, [355](#)
- gsl_fft_complex_workspace_free
 - fft.finc, [355](#)
- gsl_fft_halfcomplex_radix2_backward
 - fft.finc, [356](#)
- gsl_fft_halfcomplex_radix2_inverse
 - fft.finc, [356](#)
- gsl_fft_halfcomplex_transform
 - fft.finc, [356](#)
- gsl_fft_halfcomplex_unpack
 - fft.finc, [356](#)
- gsl_fft_halfcomplex_wavetable
 - fgsl::fgsl_fft_halfcomplex_wavetable, [191](#)
- gsl_fft_halfcomplex_wavetable_alloc
 - fft.finc, [356](#)
- gsl_fft_halfcomplex_wavetable_free
 - fft.finc, [356](#)
- gsl_fft_real_radix2_transform
 - fft.finc, [357](#)
- gsl_fft_real_transform
 - fft.finc, [357](#)
- gsl_fft_real_unpack
 - fft.finc, [357](#)
- gsl_fft_real_wavetable
 - fgsl::fgsl_fft_real_wavetable, [191](#)
- gsl_fft_real_wavetable_alloc
 - fft.finc, [357](#)
- gsl_fft_real_wavetable_free
 - fft.finc, [357](#)
- gsl_fft_real_workspace
 - fgsl::fgsl_fft_real_workspace, [191](#)
- gsl_fft_real_workspace_alloc
 - fft.finc, [357](#)
- gsl_fft_real_workspace_free
 - fft.finc, [358](#)
- gsl_file
 - fgsl::fgsl_file, [192](#)
- gsl_filter_gaussian
 - filter.finc, [361](#)
- gsl_filter_gaussian_alloc
 - filter.finc, [361](#)
- gsl_filter_gaussian_free
 - filter.finc, [362](#)
- gsl_filter_gaussian_kernel
 - filter.finc, [362](#)
- gsl_filter_gaussian_workspace
 - fgsl::fgsl_filter_gaussian_workspace, [192](#)
- gsl_filter_impulse
 - filter.finc, [362](#)
- gsl_filter_impulse_alloc

- filter.finc, 362
- gsl_filter_impulse_free
 - filter.finc, 362
- gsl_filter_impulse_workspace
 - fgsl::fgsl_filter_impulse_workspace, 193
- gsl_filter_median
 - filter.finc, 363
- gsl_filter_median_alloc
 - filter.finc, 363
- gsl_filter_median_free
 - filter.finc, 363
- gsl_filter_median_workspace
 - fgsl::fgsl_filter_median_workspace, 193
- gsl_filter_rmedian
 - filter.finc, 363
- gsl_filter_rmedian_alloc
 - filter.finc, 363
- gsl_filter_rmedian_free
 - filter.finc, 363
- gsl_filter_rmedian_workspace
 - fgsl::fgsl_filter_rmedian_workspace, 194
- gsl_finite
 - math.finc, 541
- gsl_fit_linear
 - fit.finc, 366
- gsl_fit_linear_est
 - fit.finc, 366
- gsl_fit_mul
 - fit.finc, 367
- gsl_fit_mul_est
 - fit.finc, 367
- gsl_fit_wlinear
 - fit.finc, 367
- gsl_fit_wmul
 - fit.finc, 367
- gsl_frexp
 - math.finc, 541
- gsl_function
 - fgsl::fgsl_function, 194
- gsl_function_fdf
 - fgsl::fgsl_function_fdf, 194
- gsl_heapsort
 - sort.finc, 823
- gsl_heapsort_index
 - sort.finc, 823
- gsl_histogram
 - fgsl::fgsl_histogram, 195
- gsl_histogram2d
 - fgsl::fgsl_histogram2d, 195
- gsl_histogram2d_accumulate
 - histogram.finc, 385
- gsl_histogram2d_add
 - histogram.finc, 385
- gsl_histogram2d_alloc
 - histogram.finc, 385
- gsl_histogram2d_clone
 - histogram.finc, 385
- gsl_histogram2d_cov
 - histogram.finc, 386
- gsl_histogram2d_div
 - histogram.finc, 386
- gsl_histogram2d_equal_bins_p
 - histogram.finc, 386
- gsl_histogram2d_find
 - histogram.finc, 386
- gsl_histogram2d_fprintf
 - histogram.finc, 386
- gsl_histogram2d_fread
 - histogram.finc, 386
- gsl_histogram2d_free
 - histogram.finc, 387
- gsl_histogram2d_fscanf
 - histogram.finc, 387
- gsl_histogram2d_fwrite
 - histogram.finc, 387
- gsl_histogram2d_get
 - histogram.finc, 387
- gsl_histogram2d_get_xrange
 - histogram.finc, 387
- gsl_histogram2d_get_yrange
 - histogram.finc, 387
- gsl_histogram2d_increment
 - histogram.finc, 388
- gsl_histogram2d_max_bin
 - histogram.finc, 388
- gsl_histogram2d_max_val
 - histogram.finc, 388
- gsl_histogram2d_memcpy
 - histogram.finc, 388
- gsl_histogram2d_min_bin
 - histogram.finc, 388
- gsl_histogram2d_min_val
 - histogram.finc, 388
- gsl_histogram2d_mul
 - histogram.finc, 389
- gsl_histogram2d_nx
 - histogram.finc, 389
- gsl_histogram2d_ny
 - histogram.finc, 389
- gsl_histogram2d_pdf
 - fgsl::fgsl_histogram2d_pdf, 196
- gsl_histogram2d_pdf_alloc
 - histogram.finc, 389
- gsl_histogram2d_pdf_free
 - histogram.finc, 389
- gsl_histogram2d_pdf_init
 - histogram.finc, 389
- gsl_histogram2d_pdf_sample
 - histogram.finc, 390
- gsl_histogram2d_reset
 - histogram.finc, 390
- gsl_histogram2d_scale
 - histogram.finc, 390
- gsl_histogram2d_set_ranges
 - histogram.finc, 390
- gsl_histogram2d_set_ranges_uniform

- histogram.finc, 390
- gsl_histogram2d_shift
 - histogram.finc, 391
- gsl_histogram2d_sub
 - histogram.finc, 391
- gsl_histogram2d_sum
 - histogram.finc, 391
- gsl_histogram2d_xmax
 - histogram.finc, 391
- gsl_histogram2d_xmean
 - histogram.finc, 391
- gsl_histogram2d_xmin
 - histogram.finc, 391
- gsl_histogram2d_xsigma
 - histogram.finc, 392
- gsl_histogram2d_ymax
 - histogram.finc, 392
- gsl_histogram2d_ymean
 - histogram.finc, 392
- gsl_histogram2d_ymin
 - histogram.finc, 392
- gsl_histogram2d_ysigma
 - histogram.finc, 392
- gsl_histogram_accumulate
 - histogram.finc, 392
- gsl_histogram_add
 - histogram.finc, 392
- gsl_histogram_alloc
 - histogram.finc, 393
- gsl_histogram_bins
 - histogram.finc, 393
- gsl_histogram_clone
 - histogram.finc, 393
- gsl_histogram_div
 - histogram.finc, 393
- gsl_histogram_equal_bins_p
 - histogram.finc, 393
- gsl_histogram_find
 - histogram.finc, 393
- gsl_histogram_fprintf
 - histogram.finc, 394
- gsl_histogram_fread
 - histogram.finc, 394
- gsl_histogram_free
 - histogram.finc, 394
- gsl_histogram_fscanf
 - histogram.finc, 394
- gsl_histogram_fwrite
 - histogram.finc, 394
- gsl_histogram_get
 - histogram.finc, 394
- gsl_histogram_get_range
 - histogram.finc, 395
- gsl_histogram_increment
 - histogram.finc, 395
- gsl_histogram_max
 - histogram.finc, 395
- gsl_histogram_max_bin
 - histogram.finc, 395
- gsl_histogram_mean
 - histogram.finc, 395
- gsl_histogram_memcpy
 - histogram.finc, 396
- gsl_histogram_min
 - histogram.finc, 396
- gsl_histogram_min_bin
 - histogram.finc, 396
- gsl_histogram_min_val
 - histogram.finc, 396
- gsl_histogram_mul
 - histogram.finc, 396
- gsl_histogram_pdf
 - fgsl::fgsl_histogram_pdf, 196
- gsl_histogram_pdf_alloc
 - histogram.finc, 396
- gsl_histogram_pdf_free
 - histogram.finc, 396
- gsl_histogram_pdf_init
 - histogram.finc, 397
- gsl_histogram_pdf_sample
 - histogram.finc, 397
- gsl_histogram_reset
 - histogram.finc, 397
- gsl_histogram_scale
 - histogram.finc, 397
- gsl_histogram_set_ranges
 - histogram.finc, 397
- gsl_histogram_set_ranges_uniform
 - histogram.finc, 397
- gsl_histogram_shift
 - histogram.finc, 398
- gsl_histogram_sigma
 - histogram.finc, 398
- gsl_histogram_sub
 - histogram.finc, 398
- gsl_histogram_sum
 - histogram.finc, 398
- gsl_ieee_env_setup
 - ieee.finc, 400
- gsl_ieee_fprintf_double
 - ieee.finc, 400
- gsl_ieee_fprintf_float
 - ieee.finc, 400
- gsl_ieee_printf_double
 - ieee.finc, 400
- gsl_ieee_printf_float
 - ieee.finc, 401
- gsl_integration_cquad
 - integration.finc, 412
- gsl_integration_cquad_workspace
 - fgsl::fgsl_integration_cquad_workspace, 198
- gsl_integration_cquad_workspace_alloc
 - integration.finc, 413
- gsl_integration_cquad_workspace_free

- integration.finc, 413
- gsl_integration_fixed
 - integration.finc, 413
- gsl_integration_fixed_free
 - integration.finc, 413
- gsl_integration_fixed_n
 - integration.finc, 413
- gsl_integration_fixed_nodes
 - integration.finc, 413
- gsl_integration_fixed_weights
 - integration.finc, 414
- gsl_integration_fixed_workspace
 - fgsl::fgsl_integration_fixed_workspace, 198
- gsl_integration_glfixed
 - integration.finc, 414
- gsl_integration_glfixed_point
 - integration.finc, 414
- gsl_integration_glfixed_table
 - fgsl::fgsl_integration_glfixed_table, 199
- gsl_integration_glfixed_table_alloc
 - integration.finc, 414
- gsl_integration_glfixed_table_free
 - integration.finc, 414
- gsl_integration_qag
 - integration.finc, 414
- gsl_integration_qagi
 - integration.finc, 415
- gsl_integration_qagil
 - integration.finc, 415
- gsl_integration_qagiu
 - integration.finc, 415
- gsl_integration_qaggp
 - integration.finc, 415
- gsl_integration_qags
 - integration.finc, 416
- gsl_integration_qawc
 - integration.finc, 416
- gsl_integration_qawf
 - integration.finc, 416
- gsl_integration_qawo
 - integration.finc, 417
- gsl_integration_qawo_table
 - fgsl::fgsl_integration_qawo_table, 199
- gsl_integration_qawo_table_alloc
 - integration.finc, 417
- gsl_integration_qawo_table_free
 - integration.finc, 417
- gsl_integration_qawo_table_set
 - integration.finc, 417
- gsl_integration_qawo_table_set_length
 - integration.finc, 418
- gsl_integration_qaws
 - integration.finc, 418
- gsl_integration_qaws_table
 - fgsl::fgsl_integration_qaws_table, 199
- gsl_integration_qaws_table_alloc
 - integration.finc, 418
- gsl_integration_qaws_table_free
 - integration.finc, 418
- gsl_integration_qaws_table_set
 - integration.finc, 418
- gsl_integration_qng
 - integration.finc, 419
- gsl_integration_romberg
 - integration.finc, 419
- gsl_integration_romberg_alloc
 - integration.finc, 419
- gsl_integration_romberg_free
 - integration.finc, 419
- gsl_integration_romberg_workspace
 - fgsl::fgsl_integration_romberg_workspace, 200
- gsl_integration_workspace
 - fgsl::fgsl_integration_workspace, 200
- gsl_integration_workspace_alloc
 - integration.finc, 419
- gsl_integration_workspace_free
 - integration.finc, 420
- gsl_interp
 - fgsl::fgsl_interp, 201
- gsl_interp2d
 - fgsl::fgsl_interp2d, 201
- gsl_interp2d_alloc
 - interp.finc, 439
- gsl_interp2d_eval
 - interp.finc, 440
- gsl_interp2d_eval_deriv_x
 - interp.finc, 440
- gsl_interp2d_eval_deriv_x_e
 - interp.finc, 440
- gsl_interp2d_eval_deriv_xx
 - interp.finc, 440
- gsl_interp2d_eval_deriv_xx_e
 - interp.finc, 441
- gsl_interp2d_eval_deriv_xy
 - interp.finc, 441
- gsl_interp2d_eval_deriv_xy_e
 - interp.finc, 441
- gsl_interp2d_eval_deriv_y
 - interp.finc, 441
- gsl_interp2d_eval_deriv_y_e
 - interp.finc, 442
- gsl_interp2d_eval_deriv_yy
 - interp.finc, 442
- gsl_interp2d_eval_deriv_yy_e
 - interp.finc, 442
- gsl_interp2d_eval_e
 - interp.finc, 442
- gsl_interp2d_eval_e_extrap
 - interp.finc, 443
- gsl_interp2d_eval_extrap
 - interp.finc, 443
- gsl_interp2d_eval_extrap_e
 - interp.finc, 443
- gsl_interp2d_free
 - interp.finc, 443
- gsl_interp2d_init

- interp.finc, [444](#)
- gsl_interp2d_min_size
 - interp.finc, [444](#)
- gsl_interp2d_name
 - interp.finc, [444](#)
- gsl_interp2d_type_min_size
 - interp.finc, [444](#)
- gsl_interp_accel
 - fgsl::fgsl_interp_accel, [202](#)
- gsl_interp_accel_alloc
 - interp.finc, [444](#)
- gsl_interp_accel_find
 - interp.finc, [444](#)
- gsl_interp_accel_free
 - interp.finc, [445](#)
- gsl_interp_alloc
 - interp.finc, [445](#)
- gsl_interp_bsearch
 - interp.finc, [445](#)
- gsl_interp_eval
 - interp.finc, [445](#)
- gsl_interp_eval_deriv
 - interp.finc, [445](#)
- gsl_interp_eval_deriv2
 - interp.finc, [446](#)
- gsl_interp_eval_deriv2_e
 - interp.finc, [446](#)
- gsl_interp_eval_deriv_e
 - interp.finc, [446](#)
- gsl_interp_eval_e
 - interp.finc, [446](#)
- gsl_interp_eval_integ
 - interp.finc, [446](#)
- gsl_interp_eval_integ_e
 - interp.finc, [447](#)
- gsl_interp_free
 - interp.finc, [447](#)
- gsl_interp_init
 - interp.finc, [447](#)
- gsl_interp_min_size
 - interp.finc, [447](#)
- gsl_interp_name
 - interp.finc, [447](#)
- gsl_interp_type_min_size
 - interp.finc, [448](#)
- gsl_isinf
 - math.finc, [541](#)
- gsl_isnan
 - math.finc, [541](#)
- gsl_ldexp
 - math.finc, [542](#)
- gsl_linalg_balance_matrix
 - linalg.finc, [499](#)
- gsl_linalg_bidiag_decomp
 - linalg.finc, [499](#)
- gsl_linalg_bidiag_unpack
 - linalg.finc, [499](#)
- gsl_linalg_bidiag_unpack2
 - linalg.finc, [499](#)
- linalg.finc, [499](#)
- gsl_linalg_bidiag_unpack_b
 - linalg.finc, [500](#)
- gsl_linalg_cholesky_band_decomp
 - linalg.finc, [500](#)
- gsl_linalg_cholesky_band_invert
 - linalg.finc, [500](#)
- gsl_linalg_cholesky_band_rcond
 - linalg.finc, [500](#)
- gsl_linalg_cholesky_band_scale
 - linalg.finc, [500](#)
- gsl_linalg_cholesky_band_scale_apply
 - linalg.finc, [500](#)
- gsl_linalg_cholesky_band_solve
 - linalg.finc, [501](#)
- gsl_linalg_cholesky_band_solvem
 - linalg.finc, [501](#)
- gsl_linalg_cholesky_band_svx
 - linalg.finc, [501](#)
- gsl_linalg_cholesky_band_svxm
 - linalg.finc, [501](#)
- gsl_linalg_cholesky_band_unpack
 - linalg.finc, [501](#)
- gsl_linalg_cholesky_decomp
 - linalg.finc, [501](#)
- gsl_linalg_cholesky_decomp1
 - linalg.finc, [502](#)
- gsl_linalg_cholesky_decomp2
 - linalg.finc, [502](#)
- gsl_linalg_cholesky_invert
 - linalg.finc, [502](#)
- gsl_linalg_cholesky_rcond
 - linalg.finc, [502](#)
- gsl_linalg_cholesky_scale
 - linalg.finc, [502](#)
- gsl_linalg_cholesky_scale_apply
 - linalg.finc, [502](#)
- gsl_linalg_cholesky_solve
 - linalg.finc, [503](#)
- gsl_linalg_cholesky_solve2
 - linalg.finc, [503](#)
- gsl_linalg_cholesky_svx
 - linalg.finc, [503](#)
- gsl_linalg_cholesky_svx2
 - linalg.finc, [503](#)
- gsl_linalg_cod_decomp
 - linalg.finc, [503](#)
- gsl_linalg_cod_decomp_e
 - linalg.finc, [504](#)
- gsl_linalg_cod_issolve
 - linalg.finc, [504](#)
- gsl_linalg_cod_issolve2
 - linalg.finc, [504](#)
- gsl_linalg_cod_matz
 - linalg.finc, [504](#)
- gsl_linalg_cod_unpack
 - linalg.finc, [505](#)
- gsl_linalg_complex_cholesky_decomp

- linalg.finc, [505](#)
- gsl_linalg_complex_cholesky_invert
 - linalg.finc, [505](#)
- gsl_linalg_complex_cholesky_solve
 - linalg.finc, [505](#)
- gsl_linalg_complex_cholesky_svx
 - linalg.finc, [505](#)
- gsl_linalg_complex_householder_hm
 - linalg.finc, [506](#)
- gsl_linalg_complex_householder_hv
 - linalg.finc, [506](#)
- gsl_linalg_complex_householder_mh
 - linalg.finc, [506](#)
- gsl_linalg_complex_householder_transform
 - linalg.finc, [506](#)
- gsl_linalg_complex_lu_decomp
 - linalg.finc, [506](#)
- gsl_linalg_complex_lu_det
 - linalg.finc, [506](#)
- gsl_linalg_complex_lu_invert
 - linalg.finc, [507](#)
- gsl_linalg_complex_lu_invx
 - linalg.finc, [507](#)
- gsl_linalg_complex_lu_ldet
 - linalg.finc, [507](#)
- gsl_linalg_complex_lu_refine
 - linalg.finc, [507](#)
- gsl_linalg_complex_lu_sgndet
 - linalg.finc, [507](#)
- gsl_linalg_complex_lu_solve
 - linalg.finc, [507](#)
- gsl_linalg_complex_lu_svx
 - linalg.finc, [508](#)
- gsl_linalg_complex_qr_decomp
 - linalg.finc, [508](#)
- gsl_linalg_complex_qr_decomp_r
 - linalg.finc, [508](#)
- gsl_linalg_complex_qr_issolve
 - linalg.finc, [508](#)
- gsl_linalg_complex_qr_issolve_r
 - linalg.finc, [508](#)
- gsl_linalg_complex_qr_qhvec
 - linalg.finc, [509](#)
- gsl_linalg_complex_qr_qhvec_r
 - linalg.finc, [509](#)
- gsl_linalg_complex_qr_qvec
 - linalg.finc, [509](#)
- gsl_linalg_complex_qr_solve
 - linalg.finc, [509](#)
- gsl_linalg_complex_qr_solve_r
 - linalg.finc, [509](#)
- gsl_linalg_complex_qr_svx
 - linalg.finc, [510](#)
- gsl_linalg_complex_qr_unpack_r
 - linalg.finc, [510](#)
- gsl_linalg_complex_tri_invert
 - linalg.finc, [510](#)
- gsl_linalg_complex_tri_lhl
 - linalg.finc, [510](#)
- gsl_linalg_complex_tri_ul
 - linalg.finc, [510](#)
- gsl_linalg_givens
 - linalg.finc, [510](#)
- gsl_linalg_givens_gv
 - linalg.finc, [511](#)
- gsl_linalg_hermt_d_decomp
 - linalg.finc, [511](#)
- gsl_linalg_hermt_d_unpack
 - linalg.finc, [511](#)
- gsl_linalg_hermt_d_unpack_t
 - linalg.finc, [511](#)
- gsl_linalg_hessenberg_decomp
 - linalg.finc, [511](#)
- gsl_linalg_hessenberg_set_zero
 - linalg.finc, [512](#)
- gsl_linalg_hessenberg_unpack
 - linalg.finc, [512](#)
- gsl_linalg_hessenberg_unpack_accum
 - linalg.finc, [512](#)
- gsl_linalg_hesstri_decomp
 - linalg.finc, [512](#)
- gsl_linalg_hh_solve
 - linalg.finc, [512](#)
- gsl_linalg_hh_svx
 - linalg.finc, [512](#)
- gsl_linalg_householder_hm
 - linalg.finc, [513](#)
- gsl_linalg_householder_hv
 - linalg.finc, [513](#)
- gsl_linalg_householder_mh
 - linalg.finc, [513](#)
- gsl_linalg_householder_transform
 - linalg.finc, [513](#)
- gsl_linalg_ldlt_band_decomp
 - linalg.finc, [513](#)
- gsl_linalg_ldlt_band_rcond
 - linalg.finc, [513](#)
- gsl_linalg_ldlt_band_solve
 - linalg.finc, [514](#)
- gsl_linalg_ldlt_band_svx
 - linalg.finc, [514](#)
- gsl_linalg_ldlt_band_unpack
 - linalg.finc, [514](#)
- gsl_linalg_ldlt_decomp
 - linalg.finc, [514](#)
- gsl_linalg_ldlt_rcond
 - linalg.finc, [514](#)
- gsl_linalg_ldlt_solve
 - linalg.finc, [514](#)
- gsl_linalg_ldlt_svx
 - linalg.finc, [515](#)
- gsl_linalg_lq_decomp
 - linalg.finc, [515](#)
- gsl_linalg_lq_issolve
 - linalg.finc, [515](#)
- gsl_linalg_lq_qtvec

- linalg.finc, [515](#)
- gsl_linalg_lq_unpack
 - linalg.finc, [515](#)
- gsl_linalg_lu_decomp
 - linalg.finc, [516](#)
- gsl_linalg_lu_det
 - linalg.finc, [516](#)
- gsl_linalg_lu_invert
 - linalg.finc, [516](#)
- gsl_linalg_lu_invx
 - linalg.finc, [516](#)
- gsl_linalg_lu_Lndet
 - linalg.finc, [516](#)
- gsl_linalg_lu_refine
 - linalg.finc, [516](#)
- gsl_linalg_lu_sgndet
 - linalg.finc, [517](#)
- gsl_linalg_lu_solve
 - linalg.finc, [517](#)
- gsl_linalg_lu_svx
 - linalg.finc, [517](#)
- gsl_linalg_mcholesky_decomp
 - linalg.finc, [517](#)
- gsl_linalg_mcholesky_invert
 - linalg.finc, [517](#)
- gsl_linalg_mcholesky_rcond
 - linalg.finc, [518](#)
- gsl_linalg_mcholesky_solve
 - linalg.finc, [518](#)
- gsl_linalg_mcholesky_svx
 - linalg.finc, [518](#)
- gsl_linalg_pcholesky_decomp
 - linalg.finc, [518](#)
- gsl_linalg_pcholesky_decomp2
 - linalg.finc, [518](#)
- gsl_linalg_pcholesky_invert
 - linalg.finc, [519](#)
- gsl_linalg_pcholesky_rcond
 - linalg.finc, [519](#)
- gsl_linalg_pcholesky_solve
 - linalg.finc, [519](#)
- gsl_linalg_pcholesky_solve2
 - linalg.finc, [519](#)
- gsl_linalg_pcholesky_svx
 - linalg.finc, [519](#)
- gsl_linalg_pcholesky_svx2
 - linalg.finc, [520](#)
- gsl_linalg_ql_decomp
 - linalg.finc, [520](#)
- gsl_linalg_ql_unpack
 - linalg.finc, [520](#)
- gsl_linalg_qr_decomp
 - linalg.finc, [520](#)
- gsl_linalg_qr_decomp_r
 - linalg.finc, [520](#)
- gsl_linalg_qr_Lssolve
 - linalg.finc, [520](#)
- gsl_linalg_qr_Lssolve_r
 - linalg.finc, [521](#)
- gsl_linalg_qr_matq
 - linalg.finc, [521](#)
- gsl_linalg_qr_qrsolve
 - linalg.finc, [521](#)
- gsl_linalg_qr_qtmat
 - linalg.finc, [521](#)
- gsl_linalg_qr_qtmat_r
 - linalg.finc, [521](#)
- gsl_linalg_qr_qtvec
 - linalg.finc, [522](#)
- gsl_linalg_qr_qtvec_r
 - linalg.finc, [522](#)
- gsl_linalg_qr_qvec
 - linalg.finc, [522](#)
- gsl_linalg_qr_resolve
 - linalg.finc, [522](#)
- gsl_linalg_qr_rsvx
 - linalg.finc, [522](#)
- gsl_linalg_qr_solve
 - linalg.finc, [523](#)
- gsl_linalg_qr_solve_r
 - linalg.finc, [523](#)
- gsl_linalg_qr_svx
 - linalg.finc, [523](#)
- gsl_linalg_qr_ud_decomp
 - linalg.finc, [523](#)
- gsl_linalg_qr_ud_Lssolve
 - linalg.finc, [523](#)
- gsl_linalg_qr_unpack
 - linalg.finc, [524](#)
- gsl_linalg_qr_unpack_r
 - linalg.finc, [524](#)
- gsl_linalg_qr_update
 - linalg.finc, [524](#)
- gsl_linalg_qr_ur_decomp
 - linalg.finc, [524](#)
- gsl_linalg_qr_uu_decomp
 - linalg.finc, [524](#)
- gsl_linalg_qr_uu_Lssolve
 - linalg.finc, [525](#)
- gsl_linalg_qr_uu_qtvec
 - linalg.finc, [525](#)
- gsl_linalg_qr_uz_decomp
 - linalg.finc, [525](#)
- gsl_linalg_qrpt_decomp
 - linalg.finc, [525](#)
- gsl_linalg_qrpt_decomp2
 - linalg.finc, [525](#)
- gsl_linalg_qrpt_Lssolve
 - linalg.finc, [526](#)
- gsl_linalg_qrpt_Lssolve2
 - linalg.finc, [526](#)
- gsl_linalg_qrpt_qrsolve
 - linalg.finc, [526](#)
- gsl_linalg_qrpt_rank
 - linalg.finc, [526](#)
- gsl_linalg_qrpt_rcond

- linalg.finc, [527](#)
- gsl_linalg_qrpt_solve
 - linalg.finc, [527](#)
- gsl_linalg_qrpt_rsvx
 - linalg.finc, [527](#)
- gsl_linalg_qrpt_solve
 - linalg.finc, [527](#)
- gsl_linalg_qrpt_svx
 - linalg.finc, [527](#)
- gsl_linalg_qrpt_update
 - linalg.finc, [528](#)
- gsl_linalg_r_solve
 - linalg.finc, [528](#)
- gsl_linalg_r_svx
 - linalg.finc, [528](#)
- gsl_linalg_solve_cyc_tridiag
 - linalg.finc, [528](#)
- gsl_linalg_solve_symm_cyc_tridiag
 - linalg.finc, [528](#)
- gsl_linalg_solve_symm_tridiag
 - linalg.finc, [529](#)
- gsl_linalg_solve_tridiag
 - linalg.finc, [529](#)
- gsl_linalg_sv_decomp
 - linalg.finc, [529](#)
- gsl_linalg_sv_decomp_jacobi
 - linalg.finc, [529](#)
- gsl_linalg_sv_decomp_mod
 - linalg.finc, [529](#)
- gsl_linalg_sv_leverage
 - linalg.finc, [530](#)
- gsl_linalg_sv_solve
 - linalg.finc, [530](#)
- gsl_linalg_symmtd_decomp
 - linalg.finc, [530](#)
- gsl_linalg_symmtd_unpack
 - linalg.finc, [530](#)
- gsl_linalg_symmtd_unpack_t
 - linalg.finc, [530](#)
- gsl_linalg_tri_invert
 - linalg.finc, [531](#)
- gsl_linalg_tri_lower_invert
 - linalg.finc, [531](#)
- gsl_linalg_tri_lower_rcond
 - linalg.finc, [531](#)
- gsl_linalg_tri_lower_unit_invert
 - linalg.finc, [531](#)
- gsl_linalg_tri_ltl
 - linalg.finc, [531](#)
- gsl_linalg_tri_rcond
 - linalg.finc, [531](#)
- gsl_linalg_tri_ul
 - linalg.finc, [532](#)
- gsl_linalg_tri_upper_invert
 - linalg.finc, [532](#)
- gsl_linalg_tri_upper_rcond
 - linalg.finc, [532](#)
- gsl_linalg_tri_upper_unit_invert
 - linalg.finc, [532](#)
- gsl_log1p
 - math.finc, [542](#)
- gsl_matrix
 - fgsl::fgsl_matrix, [203](#)
- gsl_matrix_complex
 - fgsl::fgsl_matrix_complex, [204](#)
- gsl_matrix_complex_get
 - array.finc, [298](#)
- gsl_matrix_complex_ptr
 - array.finc, [298](#)
- gsl_matrix_get
 - array.finc, [298](#)
- gsl_matrix_ptr
 - array.finc, [298](#)
- gsl_min_fminimizer
 - fgsl::fgsl_min_fminimizer, [207](#)
- gsl_min_fminimizer_alloc
 - min.finc, [546](#)
- gsl_min_fminimizer_f_lower
 - min.finc, [546](#)
- gsl_min_fminimizer_f_minimum
 - min.finc, [546](#)
- gsl_min_fminimizer_f_upper
 - min.finc, [546](#)
- gsl_min_fminimizer_free
 - min.finc, [546](#)
- gsl_min_fminimizer_iterate
 - min.finc, [546](#)
- gsl_min_fminimizer_name
 - min.finc, [546](#)
- gsl_min_fminimizer_set
 - min.finc, [547](#)
- gsl_min_fminimizer_set_with_values
 - min.finc, [547](#)
- gsl_min_fminimizer_x_lower
 - min.finc, [547](#)
- gsl_min_fminimizer_x_minimum
 - min.finc, [547](#)
- gsl_min_fminimizer_x_upper
 - min.finc, [547](#)
- gsl_min_test_interval
 - min.finc, [547](#)
- gsl_mode
 - fgsl::fgsl_mode_t, [208](#)
- gsl_monte_function
 - fgsl::fgsl_monte_function, [208](#)
- gsl_monte_miser_alloc
 - montecarlo.finc, [559](#)
- gsl_monte_miser_free
 - montecarlo.finc, [559](#)
- gsl_monte_miser_init
 - montecarlo.finc, [559](#)
- gsl_monte_miser_integrate
 - montecarlo.finc, [559](#)
- gsl_monte_miser_state
 - fgsl::fgsl_monte_miser_state, [209](#)
- gsl_monte_plain_alloc

- montecarlo.finc, [559](#)
- gsl_monte_plain_free
 - montecarlo.finc, [560](#)
- gsl_monte_plain_init
 - montecarlo.finc, [560](#)
- gsl_monte_plain_integrate
 - montecarlo.finc, [560](#)
- gsl_monte_plain_state
 - fgsl::fgsl_monte_plain_state, [209](#)
- gsl_monte_vegas_alloc
 - montecarlo.finc, [560](#)
- gsl_monte_vegas_chisq
 - montecarlo.finc, [560](#)
- gsl_monte_vegas_free
 - montecarlo.finc, [560](#)
- gsl_monte_vegas_init
 - montecarlo.finc, [561](#)
- gsl_monte_vegas_integrate
 - montecarlo.finc, [561](#)
- gsl_monte_vegas_runval
 - montecarlo.finc, [561](#)
- gsl_monte_vegas_state
 - fgsl::fgsl_monte_vegas_state, [209](#)
- gsl_movstat_alloc
 - movstat.finc, [566](#)
- gsl_movstat_alloc2
 - movstat.finc, [566](#)
- gsl_movstat_apply
 - movstat.finc, [566](#)
- gsl_movstat_fill
 - movstat.finc, [566](#)
- gsl_movstat_free
 - movstat.finc, [567](#)
- gsl_movstat_mad
 - movstat.finc, [567](#)
- gsl_movstat_mad0
 - movstat.finc, [567](#)
- gsl_movstat_max
 - movstat.finc, [567](#)
- gsl_movstat_mean
 - movstat.finc, [567](#)
- gsl_movstat_median
 - movstat.finc, [568](#)
- gsl_movstat_min
 - movstat.finc, [568](#)
- gsl_movstat_minmax
 - movstat.finc, [568](#)
- gsl_movstat_qn
 - movstat.finc, [568](#)
- gsl_movstat_qqr
 - movstat.finc, [568](#)
- gsl_movstat_sd
 - movstat.finc, [569](#)
- gsl_movstat_sn
 - movstat.finc, [569](#)
- gsl_movstat_sum
 - movstat.finc, [569](#)
- gsl_movstat_variance
 - movstat.finc, [569](#)
- gsl_movstat_workspace
 - fgsl::fgsl_movstat_workspace, [211](#)
- gsl_multifit_covar
 - multifit.finc, [594](#)
- gsl_multifit_covar_qrpt
 - multifit.finc, [594](#)
- gsl_multifit_eval_wdf
 - multifit.finc, [594](#)
- gsl_multifit_eval_wf
 - multifit.finc, [594](#)
- gsl_multifit_fdfridge
 - fgsl::fgsl_multifit_fdfridge, [212](#)
- gsl_multifit_fdfridge_alloc
 - multifit.finc, [595](#)
- gsl_multifit_fdfridge_driver
 - multifit.finc, [595](#)
- gsl_multifit_fdfridge_free
 - multifit.finc, [595](#)
- gsl_multifit_fdfridge_iterate
 - multifit.finc, [595](#)
- gsl_multifit_fdfridge_name
 - multifit.finc, [595](#)
- gsl_multifit_fdfridge_niter
 - multifit.finc, [595](#)
- gsl_multifit_fdfridge_position
 - multifit.finc, [596](#)
- gsl_multifit_fdfridge_residual
 - multifit.finc, [596](#)
- gsl_multifit_fdfridge_set
 - multifit.finc, [596](#)
- gsl_multifit_fdfridge_set2
 - multifit.finc, [596](#)
- gsl_multifit_fdfridge_set3
 - multifit.finc, [596](#)
- gsl_multifit_fdfridge_wset
 - multifit.finc, [596](#)
- gsl_multifit_fdfridge_wset2
 - multifit.finc, [597](#)
- gsl_multifit_fdfridge_wset3
 - multifit.finc, [597](#)
- gsl_multifit_fdfsolver
 - fgsl::fgsl_multifit_fdfsolver, [213](#)
- gsl_multifit_fdfsolver_alloc
 - multifit.finc, [597](#)
- gsl_multifit_fdfsolver_dif_df
 - multifit.finc, [597](#)
- gsl_multifit_fdfsolver_driver
 - multifit.finc, [597](#)
- gsl_multifit_fdfsolver_dx
 - multifit.finc, [598](#)
- gsl_multifit_fdfsolver_f
 - multifit.finc, [598](#)
- gsl_multifit_fdfsolver_free
 - multifit.finc, [598](#)
- gsl_multifit_fdfsolver_iterate
 - multifit.finc, [598](#)
- gsl_multifit_fdfsolver_jac

- multifit.finc, 598
- gsl_multifit_fdfsolver_name
 - multifit.finc, 598
- gsl_multifit_fdfsolver_niter
 - multifit.finc, 599
- gsl_multifit_fdfsolver_position
 - multifit.finc, 599
- gsl_multifit_fdfsolver_residual
 - multifit.finc, 599
- gsl_multifit_fdfsolver_set
 - multifit.finc, 599
- gsl_multifit_fdfsolver_test
 - multifit.finc, 599
- gsl_multifit_fdfsolver_wset
 - multifit.finc, 599
- gsl_multifit_fsolver
 - fgsl::fgsl_multifit_fsolver, 214
- gsl_multifit_fsolver_alloc
 - multifit.finc, 600
- gsl_multifit_fsolver_driver
 - multifit.finc, 600
- gsl_multifit_fsolver_free
 - multifit.finc, 600
- gsl_multifit_fsolver_iterate
 - multifit.finc, 600
- gsl_multifit_fsolver_name
 - multifit.finc, 600
- gsl_multifit_fsolver_position
 - multifit.finc, 600
- gsl_multifit_fsolver_set
 - multifit.finc, 601
- gsl_multifit_function
 - fgsl::fgsl_multifit_function, 215
- gsl_multifit_function_fdf
 - fgsl::fgsl_multifit_function_fdf, 215
- gsl_multifit_gradient
 - multifit.finc, 601
- gsl_multifit_linear
 - multifit.finc, 601
- gsl_multifit_linear_alloc
 - multifit.finc, 601
- gsl_multifit_linear_applyw
 - multifit.finc, 601
- gsl_multifit_linear_bsvd
 - multifit.finc, 602
- gsl_multifit_linear_est
 - multifit.finc, 602
- gsl_multifit_linear_free
 - multifit.finc, 602
- gsl_multifit_linear_gcv
 - multifit.finc, 602
- gsl_multifit_linear_gcv_calc
 - multifit.finc, 602
- gsl_multifit_linear_gcv_curve
 - multifit.finc, 603
- gsl_multifit_linear_gcv_init
 - multifit.finc, 603
- gsl_multifit_linear_gcv_min
 - multifit.finc, 603
- gsl_multifit_linear_genform1
 - multifit.finc, 603
- gsl_multifit_linear_genform2
 - multifit.finc, 603
- gsl_multifit_linear_l_decomp
 - multifit.finc, 604
- gsl_multifit_linear_lcorner
 - multifit.finc, 604
- gsl_multifit_linear_lcorner2
 - multifit.finc, 604
- gsl_multifit_linear_lcurvature
 - multifit.finc, 604
- gsl_multifit_linear_lcurve
 - multifit.finc, 604
- gsl_multifit_linear_lk
 - multifit.finc, 605
- gsl_multifit_linear_lreg
 - multifit.finc, 605
- gsl_multifit_linear_lsobolev
 - multifit.finc, 605
- gsl_multifit_linear_rank
 - multifit.finc, 605
- gsl_multifit_linear_rcond
 - multifit.finc, 605
- gsl_multifit_linear_residuals
 - multifit.finc, 606
- gsl_multifit_linear_solve
 - multifit.finc, 606
- gsl_multifit_linear_stdform1
 - multifit.finc, 606
- gsl_multifit_linear_stdform2
 - multifit.finc, 606
- gsl_multifit_linear_svd
 - multifit.finc, 606
- gsl_multifit_linear_tsvd
 - multifit.finc, 607
- gsl_multifit_linear_wgenform2
 - multifit.finc, 607
- gsl_multifit_linear_workspace
 - fgsl::fgsl_multifit_linear_workspace, 216
- gsl_multifit_linear_wstdform1
 - multifit.finc, 607
- gsl_multifit_linear_wstdform2
 - multifit.finc, 607
- gsl_multifit_nlinear_alloc
 - nlfit.finc, 649
- gsl_multifit_nlinear_covar
 - nlfit.finc, 649
- gsl_multifit_nlinear_default_parameters
 - nlfit.finc, 649
- gsl_multifit_nlinear_driver
 - nlfit.finc, 649
- gsl_multifit_nlinear_fdf
 - fgsl::fgsl_multifit_nlinear_fdf, 216
- gsl_multifit_nlinear_fdf_get
 - nlfit.finc, 650
- gsl_multifit_nlinear_free

- nlfit.finc, [650](#)
- gsl_multifit_nlinear_get_scale
 - nlfit.finc, [650](#)
- gsl_multifit_nlinear_get_solver
 - nlfit.finc, [650](#)
- gsl_multifit_nlinear_get_trs
 - nlfit.finc, [650](#)
- gsl_multifit_nlinear_init
 - nlfit.finc, [651](#)
- gsl_multifit_nlinear_iterate
 - nlfit.finc, [651](#)
- gsl_multifit_nlinear_jac
 - nlfit.finc, [651](#)
- gsl_multifit_nlinear_name
 - nlfit.finc, [651](#)
- gsl_multifit_nlinear_niter
 - nlfit.finc, [651](#)
- gsl_multifit_nlinear_parameters
 - fgsl::fgsl_multifit_nlinear_parameters, [217](#)
- gsl_multifit_nlinear_position
 - nlfit.finc, [651](#)
- gsl_multifit_nlinear_rcond
 - nlfit.finc, [651](#)
- gsl_multifit_nlinear_residual
 - nlfit.finc, [652](#)
- gsl_multifit_nlinear_setup
 - nlfit.finc, [652](#)
- gsl_multifit_nlinear_test
 - nlfit.finc, [652](#)
- gsl_multifit_nlinear_trs_name
 - nlfit.finc, [652](#)
- gsl_multifit_nlinear_type
 - fgsl::fgsl_multifit_nlinear_type, [218](#)
- gsl_multifit_nlinear_winit
 - nlfit.finc, [652](#)
- gsl_multifit_nlinear_workspace
 - fgsl::fgsl_multifit_nlinear_workspace, [218](#)
- gsl_multifit_robust
 - multifit.finc, [608](#)
- gsl_multifit_robust_alloc
 - multifit.finc, [608](#)
- gsl_multifit_robust_est
 - multifit.finc, [608](#)
- gsl_multifit_robust_free
 - multifit.finc, [608](#)
- gsl_multifit_robust_maxiter
 - multifit.finc, [608](#)
- gsl_multifit_robust_name
 - multifit.finc, [609](#)
- gsl_multifit_robust_residuals
 - multifit.finc, [609](#)
- gsl_multifit_robust_statistics
 - multifit.finc, [609](#)
- gsl_multifit_robust_tune
 - multifit.finc, [609](#)
- gsl_multifit_robust_weights
 - multifit.finc, [609](#)
- gsl_multifit_robust_workspace
 - fgsl::fgsl_multifit_robust_workspace, [221](#)
- gsl_multifit_test_delta
 - multifit.finc, [609](#)
- gsl_multifit_test_gradient
 - multifit.finc, [610](#)
- gsl_multifit_wlinear
 - multifit.finc, [610](#)
- gsl_multifit_wlinear_svd
 - multifit.finc, [610](#)
- gsl_multifit_wlinear_tsvd
 - multifit.finc, [610](#)
- gsl_multifit_wlinear_usvd
 - multifit.finc, [611](#)
- gsl_multilarge_linear_accumulate
 - multilarge.finc, [616](#)
- gsl_multilarge_linear_alloc
 - multilarge.finc, [616](#)
- gsl_multilarge_linear_free
 - multilarge.finc, [616](#)
- gsl_multilarge_linear_genform1
 - multilarge.finc, [616](#)
- gsl_multilarge_linear_genform2
 - multilarge.finc, [616](#)
- gsl_multilarge_linear_l_decomp
 - multilarge.finc, [617](#)
- gsl_multilarge_linear_lcurve
 - multilarge.finc, [617](#)
- gsl_multilarge_linear_matrix_ptr
 - multilarge.finc, [617](#)
- gsl_multilarge_linear_name
 - multilarge.finc, [617](#)
- gsl_multilarge_linear_rcond
 - multilarge.finc, [617](#)
- gsl_multilarge_linear_reset
 - multilarge.finc, [617](#)
- gsl_multilarge_linear_rhs_ptr
 - multilarge.finc, [618](#)
- gsl_multilarge_linear_solve
 - multilarge.finc, [618](#)
- gsl_multilarge_linear_stdform1
 - multilarge.finc, [618](#)
- gsl_multilarge_linear_stdform2
 - multilarge.finc, [618](#)
- gsl_multilarge_linear_workspace
 - fgsl::fgsl_multilarge_linear_workspace, [222](#)
- gsl_multilarge_linear_wstdform1
 - multilarge.finc, [618](#)
- gsl_multilarge_linear_wstdform2
 - multilarge.finc, [619](#)
- gsl_multilarge_nlinear_alloc
 - nlfit.finc, [652](#)
- gsl_multilarge_nlinear_covar
 - nlfit.finc, [653](#)
- gsl_multilarge_nlinear_default_parameters
 - nlfit.finc, [653](#)
- gsl_multilarge_nlinear_driver
 - nlfit.finc, [653](#)
- gsl_multilarge_nlinear_fdf

- fgsl::fgsl_multilarge_nlinear_fdf, [223](#)
- gsl_multilarge_nlinear_fdf_get
 - nlfit.finc, [653](#)
- gsl_multilarge_nlinear_free
 - nlfit.finc, [653](#)
- gsl_multilarge_nlinear_get_scale
 - nlfit.finc, [654](#)
- gsl_multilarge_nlinear_get_solver
 - nlfit.finc, [654](#)
- gsl_multilarge_nlinear_get_trs
 - nlfit.finc, [654](#)
- gsl_multilarge_nlinear_init
 - nlfit.finc, [654](#)
- gsl_multilarge_nlinear_iterate
 - nlfit.finc, [654](#)
- gsl_multilarge_nlinear_name
 - nlfit.finc, [654](#)
- gsl_multilarge_nlinear_niter
 - nlfit.finc, [654](#)
- gsl_multilarge_nlinear_parameters
 - fgsl::fgsl_multilarge_nlinear_parameters, [223](#)
- gsl_multilarge_nlinear_position
 - nlfit.finc, [655](#)
- gsl_multilarge_nlinear_rcond
 - nlfit.finc, [655](#)
- gsl_multilarge_nlinear_residual
 - nlfit.finc, [655](#)
- gsl_multilarge_nlinear_setup
 - nlfit.finc, [655](#)
- gsl_multilarge_nlinear_test
 - nlfit.finc, [655](#)
- gsl_multilarge_nlinear_trs_name
 - nlfit.finc, [655](#)
- gsl_multilarge_nlinear_type
 - fgsl::fgsl_multilarge_nlinear_type, [224](#)
- gsl_multilarge_nlinear_winit
 - nlfit.finc, [656](#)
- gsl_multilarge_nlinear_workspace
 - fgsl::fgsl_multilarge_nlinear_workspace, [225](#)
- gsl_multimin_fdfminimizer
 - fgsl::fgsl_multimin_fdfminimizer, [225](#)
- gsl_multimin_fdfminimizer_alloc
 - multimin.finc, [625](#)
- gsl_multimin_fdfminimizer_free
 - multimin.finc, [626](#)
- gsl_multimin_fdfminimizer_gradient
 - multimin.finc, [626](#)
- gsl_multimin_fdfminimizer_iterate
 - multimin.finc, [626](#)
- gsl_multimin_fdfminimizer_minimum
 - multimin.finc, [626](#)
- gsl_multimin_fdfminimizer_name
 - multimin.finc, [626](#)
- gsl_multimin_fdfminimizer_restart
 - multimin.finc, [626](#)
- gsl_multimin_fdfminimizer_set
 - multimin.finc, [626](#)
- gsl_multimin_fdfminimizer_x
 - multimin.finc, [627](#)
- gsl_multimin_fminimizer
 - fgsl::fgsl_multimin_fminimizer, [226](#)
- gsl_multimin_fminimizer_alloc
 - multimin.finc, [627](#)
- gsl_multimin_fminimizer_free
 - multimin.finc, [627](#)
- gsl_multimin_fminimizer_iterate
 - multimin.finc, [627](#)
- gsl_multimin_fminimizer_minimum
 - multimin.finc, [627](#)
- gsl_multimin_fminimizer_name
 - multimin.finc, [627](#)
- gsl_multimin_fminimizer_set
 - multimin.finc, [628](#)
- gsl_multimin_fminimizer_size
 - multimin.finc, [628](#)
- gsl_multimin_fminimizer_x
 - multimin.finc, [628](#)
- gsl_multimin_function
 - fgsl::fgsl_multimin_function, [227](#)
- gsl_multimin_function_fdf
 - fgsl::fgsl_multimin_function_fdf, [227](#)
- gsl_multimin_test_gradient
 - multimin.finc, [628](#)
- gsl_multimin_test_size
 - multimin.finc, [628](#)
- gsl_multiroot_fdfsolver
 - fgsl::fgsl_multiroot_fdfsolver, [228](#)
- gsl_multiroot_fdfsolver_alloc
 - multiroots.finc, [635](#)
- gsl_multiroot_fdfsolver_dx
 - multiroots.finc, [635](#)
- gsl_multiroot_fdfsolver_f
 - multiroots.finc, [635](#)
- gsl_multiroot_fdfsolver_free
 - multiroots.finc, [635](#)
- gsl_multiroot_fdfsolver_iterate
 - multiroots.finc, [635](#)
- gsl_multiroot_fdfsolver_name
 - multiroots.finc, [636](#)
- gsl_multiroot_fdfsolver_root
 - multiroots.finc, [636](#)
- gsl_multiroot_fdfsolver_set
 - multiroots.finc, [636](#)
- gsl_multiroot_fsolver
 - fgsl::fgsl_multiroot_fsolver, [229](#)
- gsl_multiroot_fsolver_alloc
 - multiroots.finc, [636](#)
- gsl_multiroot_fsolver_dx
 - multiroots.finc, [636](#)
- gsl_multiroot_fsolver_f
 - multiroots.finc, [636](#)
- gsl_multiroot_fsolver_free
 - multiroots.finc, [637](#)
- gsl_multiroot_fsolver_iterate
 - multiroots.finc, [637](#)
- gsl_multiroot_fsolver_name

- multiroots.finc, [637](#)
- gsl_multiroot_fsolver_root
 - multiroots.finc, [637](#)
- gsl_multiroot_fsolver_set
 - multiroots.finc, [637](#)
- gsl_multiroot_function
 - fgsl::fgsl_multiroot_function, [229](#)
- gsl_multiroot_function_fdf
 - fgsl::fgsl_multiroot_function_fdf, [230](#)
- gsl_multiroot_test_delta
 - multiroots.finc, [637](#)
- gsl_multiroot_test_residual
 - multiroots.finc, [638](#)
- gsl_multiset
 - fgsl::fgsl_multiset, [230](#)
- gsl_multiset_alloc
 - permutation.finc, [706](#)
- gsl_multiset_calloc
 - permutation.finc, [706](#)
- gsl_multiset_data
 - permutation.finc, [706](#)
- gsl_multiset_fprintf
 - permutation.finc, [706](#)
- gsl_multiset_fread
 - permutation.finc, [707](#)
- gsl_multiset_free
 - permutation.finc, [707](#)
- gsl_multiset_fscanf
 - permutation.finc, [707](#)
- gsl_multiset_fwrite
 - permutation.finc, [707](#)
- gsl_multiset_get
 - permutation.finc, [707](#)
- gsl_multiset_init_first
 - permutation.finc, [707](#)
- gsl_multiset_init_last
 - permutation.finc, [708](#)
- gsl_multiset_k
 - permutation.finc, [708](#)
- gsl_multiset_memcpy
 - permutation.finc, [708](#)
- gsl_multiset_n
 - permutation.finc, [708](#)
- gsl_multiset_next
 - permutation.finc, [708](#)
- gsl_multiset_prev
 - permutation.finc, [708](#)
- gsl_multiset_valid
 - permutation.finc, [708](#)
- gsl_ntuple
 - fgsl::fgsl_ntuple, [231](#)
- gsl_ntuple_close
 - ntuple.finc, [660](#)
- gsl_ntuple_create
 - ntuple.finc, [660](#)
- gsl_ntuple_open
 - ntuple.finc, [661](#)
- gsl_ntuple_project
 - ntuple.finc, [661](#)
- gsl_ntuple_read
 - ntuple.finc, [661](#)
- gsl_ntuple_select_fn
 - fgsl::fgsl_ntuple_select_fn, [231](#)
- gsl_ntuple_value_fn
 - fgsl::fgsl_ntuple_value_fn, [232](#)
- gsl_ntuple_write
 - ntuple.finc, [661](#)
- gsl_odeiv2_control
 - fgsl::fgsl_odeiv2_control, [233](#)
- gsl_odeiv2_control_alloc
 - ode.finc, [678](#)
- gsl_odeiv2_control_errlevel
 - ode.finc, [678](#)
- gsl_odeiv2_control_free
 - ode.finc, [678](#)
- gsl_odeiv2_control_hadjust
 - ode.finc, [679](#)
- gsl_odeiv2_control_init
 - ode.finc, [679](#)
- gsl_odeiv2_control_name
 - ode.finc, [679](#)
- gsl_odeiv2_control_scaled_new
 - ode.finc, [679](#)
- gsl_odeiv2_control_set_driver
 - ode.finc, [679](#)
- gsl_odeiv2_control_standard_new
 - ode.finc, [680](#)
- gsl_odeiv2_control_type
 - fgsl::fgsl_odeiv2_control_type, [233](#)
- gsl_odeiv2_control_y_new
 - ode.finc, [680](#)
- gsl_odeiv2_control_yp_new
 - ode.finc, [680](#)
- gsl_odeiv2_driver
 - fgsl::fgsl_odeiv2_driver, [234](#)
- gsl_odeiv2_driver_alloc_scaled_new
 - ode.finc, [680](#)
- gsl_odeiv2_driver_alloc_standard_new
 - ode.finc, [680](#)
- gsl_odeiv2_driver_alloc_y_new
 - ode.finc, [681](#)
- gsl_odeiv2_driver_alloc_yp_new
 - ode.finc, [681](#)
- gsl_odeiv2_driver_apply
 - ode.finc, [681](#)
- gsl_odeiv2_driver_apply_fixed_step
 - ode.finc, [681](#)
- gsl_odeiv2_driver_free
 - ode.finc, [681](#)
- gsl_odeiv2_driver_reset
 - ode.finc, [682](#)
- gsl_odeiv2_driver_reset_hstart
 - ode.finc, [682](#)
- gsl_odeiv2_driver_set_hmax
 - ode.finc, [682](#)
- gsl_odeiv2_driver_set_hmin

- ode.finc, [682](#)
- gsl_odeiv2_driver_set_nmax
 - ode.finc, [682](#)
- gsl_odeiv2_evolve
 - fgsl::fgsl_odeiv2_evolve, [234](#)
- gsl_odeiv2_evolve_alloc
 - ode.finc, [682](#)
- gsl_odeiv2_evolve_apply
 - ode.finc, [683](#)
- gsl_odeiv2_evolve_apply_fixed_step
 - ode.finc, [683](#)
- gsl_odeiv2_evolve_free
 - ode.finc, [683](#)
- gsl_odeiv2_evolve_reset
 - ode.finc, [683](#)
- gsl_odeiv2_evolve_set_driver
 - ode.finc, [683](#)
- gsl_odeiv2_step
 - fgsl::fgsl_odeiv2_step, [235](#)
- gsl_odeiv2_step_alloc
 - ode.finc, [684](#)
- gsl_odeiv2_step_apply
 - ode.finc, [684](#)
- gsl_odeiv2_step_free
 - ode.finc, [684](#)
- gsl_odeiv2_step_name
 - ode.finc, [684](#)
- gsl_odeiv2_step_order
 - ode.finc, [684](#)
- gsl_odeiv2_step_reset
 - ode.finc, [684](#)
- gsl_odeiv2_step_set_driver
 - ode.finc, [685](#)
- gsl_odeiv2_system
 - fgsl::fgsl_odeiv2_system, [235](#)
- gsl_odeiv_control
 - fgsl::fgsl_odeiv_control, [236](#)
- gsl_odeiv_control_alloc
 - ode.finc, [685](#)
- gsl_odeiv_control_free
 - ode.finc, [685](#)
- gsl_odeiv_control_hadjust
 - ode.finc, [685](#)
- gsl_odeiv_control_init
 - ode.finc, [685](#)
- gsl_odeiv_control_name
 - ode.finc, [685](#)
- gsl_odeiv_control_scaled_new
 - ode.finc, [686](#)
- gsl_odeiv_control_standard_new
 - ode.finc, [686](#)
- gsl_odeiv_control_type
 - fgsl::fgsl_odeiv_control_type, [236](#)
- gsl_odeiv_control_y_new
 - ode.finc, [686](#)
- gsl_odeiv_control_yp_new
 - ode.finc, [686](#)
- gsl_odeiv_evolve
 - fgsl::fgsl_odeiv_evolve, [237](#)
- gsl_odeiv_evolve_alloc
 - ode.finc, [686](#)
- gsl_odeiv_evolve_apply
 - ode.finc, [686](#)
- gsl_odeiv_evolve_free
 - ode.finc, [687](#)
- gsl_odeiv_evolve_reset
 - ode.finc, [687](#)
- gsl_odeiv_step
 - fgsl::fgsl_odeiv_step, [237](#)
- gsl_odeiv_step_alloc
 - ode.finc, [687](#)
- gsl_odeiv_step_apply
 - ode.finc, [687](#)
- gsl_odeiv_step_free
 - ode.finc, [687](#)
- gsl_odeiv_step_name
 - ode.finc, [688](#)
- gsl_odeiv_step_order
 - ode.finc, [688](#)
- gsl_odeiv_step_reset
 - ode.finc, [688](#)
- gsl_odeiv_system
 - fgsl::fgsl_odeiv_system, [238](#)
- gsl_permutation
 - fgsl::fgsl_permutation, [238](#)
- gsl_permutation_alloc
 - permutation.finc, [709](#)
- gsl_permutation_calloc
 - permutation.finc, [709](#)
- gsl_permutation_canonical_cycles
 - permutation.finc, [709](#)
- gsl_permutation_canonical_to_linear
 - permutation.finc, [709](#)
- gsl_permutation_data
 - permutation.finc, [709](#)
- gsl_permutation_fprintf
 - permutation.finc, [709](#)
- gsl_permutation_fread
 - permutation.finc, [709](#)
- gsl_permutation_free
 - permutation.finc, [710](#)
- gsl_permutation_fscanf
 - permutation.finc, [710](#)
- gsl_permutation_fwrite
 - permutation.finc, [710](#)
- gsl_permutation_get
 - permutation.finc, [710](#)
- gsl_permutation_init
 - permutation.finc, [710](#)
- gsl_permutation_inverse
 - permutation.finc, [710](#)
- gsl_permutation_inversions
 - permutation.finc, [711](#)
- gsl_permutation_linear_cycles
 - permutation.finc, [711](#)
- gsl_permutation_linear_to_canonical

- permutation.finc, [711](#)
- gsl_permutation_memcpy
 - permutation.finc, [711](#)
- gsl_permutation_mul
 - permutation.finc, [711](#)
- gsl_permutation_next
 - permutation.finc, [711](#)
- gsl_permutation_prev
 - permutation.finc, [712](#)
- gsl_permutation_reverse
 - permutation.finc, [712](#)
- gsl_permutation_size
 - permutation.finc, [712](#)
- gsl_permutation_swap
 - permutation.finc, [712](#)
- gsl_permutation_valid
 - permutation.finc, [712](#)
- gsl_permute
 - permutation.finc, [712](#)
- gsl_permute_inverse
 - permutation.finc, [713](#)
- gsl_permute_long
 - permutation.finc, [713](#)
- gsl_permute_long_inverse
 - permutation.finc, [713](#)
- gsl_permute_matrix
 - permutation.finc, [713](#)
- gsl_permute_vector
 - permutation.finc, [713](#)
- gsl_permute_vector_inverse
 - permutation.finc, [714](#)
- gsl_poly_complex_eval
 - poly.finc, [718](#)
- gsl_poly_complex_solve
 - poly.finc, [719](#)
- gsl_poly_complex_solve_cubic
 - poly.finc, [719](#)
- gsl_poly_complex_solve_quadratic
 - poly.finc, [719](#)
- gsl_poly_complex_workspace
 - fgsl::fgsl_poly_complex_workspace, [240](#)
- gsl_poly_complex_workspace_alloc
 - poly.finc, [719](#)
- gsl_poly_complex_workspace_free
 - poly.finc, [719](#)
- gsl_poly_dd_eval
 - poly.finc, [720](#)
- gsl_poly_dd_hermite_init
 - poly.finc, [720](#)
- gsl_poly_dd_init
 - poly.finc, [720](#)
- gsl_poly_dd_taylor
 - poly.finc, [720](#)
- gsl_poly_eval
 - poly.finc, [720](#)
- gsl_poly_eval_derivs
 - poly.finc, [721](#)
- gsl_poly_solve_cubic
 - poly.finc, [721](#)
- gsl_poly_solve_quadratic
 - poly.finc, [721](#)
- gsl_qrng
 - fgsl::fgsl_qrng, [241](#)
- gsl_qrng_alloc
 - rng.finc, [780](#)
- gsl_qrng_clone
 - rng.finc, [780](#)
- gsl_qrng_free
 - rng.finc, [780](#)
- gsl_qrng_get
 - rng.finc, [780](#)
- gsl_qrng_init
 - rng.finc, [780](#)
- gsl_qrng_memcpy
 - rng.finc, [781](#)
- gsl_qrng_name
 - rng.finc, [781](#)
- gsl_ran_bernoulli
 - rng.finc, [781](#)
- gsl_ran_bernoulli_pdf
 - rng.finc, [781](#)
- gsl_ran_beta
 - rng.finc, [781](#)
- gsl_ran_beta_pdf
 - rng.finc, [781](#)
- gsl_ran_binomial
 - rng.finc, [782](#)
- gsl_ran_binomial_pdf
 - rng.finc, [782](#)
- gsl_ran_bivariate_gaussian
 - rng.finc, [782](#)
- gsl_ran_bivariate_gaussian_pdf
 - rng.finc, [782](#)
- gsl_ran_cauchy
 - rng.finc, [782](#)
- gsl_ran_cauchy_pdf
 - rng.finc, [783](#)
- gsl_ran_chisq
 - rng.finc, [783](#)
- gsl_ran_chisq_pdf
 - rng.finc, [783](#)
- gsl_ran_choose
 - rng.finc, [783](#)
- gsl_ran_dir_2d
 - rng.finc, [783](#)
- gsl_ran_dir_2d_trig_method
 - rng.finc, [783](#)
- gsl_ran_dir_3d
 - rng.finc, [784](#)
- gsl_ran_dir_nd
 - rng.finc, [784](#)
- gsl_ran_dirichlet
 - rng.finc, [784](#)
- gsl_ran_dirichlet_lnpdf
 - rng.finc, [784](#)
- gsl_ran_dirichlet_pdf
 - rng.finc, [784](#)

- rng.finc, [784](#)
- gsl_ran_discrete
 - rng.finc, [785](#)
- gsl_ran_discrete_free
 - rng.finc, [785](#)
- gsl_ran_discrete_pdf
 - rng.finc, [785](#)
- gsl_ran_discrete_preproc
 - rng.finc, [785](#)
- gsl_ran_discrete_t
 - fgsl::fgsl_ran_discrete_t, [241](#)
- gsl_ran_exponential
 - rng.finc, [785](#)
- gsl_ran_exponential_pdf
 - rng.finc, [785](#)
- gsl_ran_exppow
 - rng.finc, [786](#)
- gsl_ran_exppow_pdf
 - rng.finc, [786](#)
- gsl_ran_fdist
 - rng.finc, [786](#)
- gsl_ran_fdist_pdf
 - rng.finc, [786](#)
- gsl_ran_flat
 - rng.finc, [786](#)
- gsl_ran_flat_pdf
 - rng.finc, [786](#)
- gsl_ran_gamma
 - rng.finc, [787](#)
- gsl_ran_gamma_mt
 - rng.finc, [787](#)
- gsl_ran_gamma_pdf
 - rng.finc, [787](#)
- gsl_ran_gaussian
 - rng.finc, [787](#)
- gsl_ran_gaussian_pdf
 - rng.finc, [787](#)
- gsl_ran_gaussian_ratio_method
 - rng.finc, [787](#)
- gsl_ran_gaussian_tail
 - rng.finc, [788](#)
- gsl_ran_gaussian_tail_pdf
 - rng.finc, [788](#)
- gsl_ran_gaussian_ziggurat
 - rng.finc, [788](#)
- gsl_ran_geometric
 - rng.finc, [788](#)
- gsl_ran_geometric_pdf
 - rng.finc, [788](#)
- gsl_ran_gumbel1
 - rng.finc, [788](#)
- gsl_ran_gumbel1_pdf
 - rng.finc, [789](#)
- gsl_ran_gumbel2
 - rng.finc, [789](#)
- gsl_ran_gumbel2_pdf
 - rng.finc, [789](#)
- gsl_ran_hypergeometric
 - rng.finc, [789](#)
- gsl_ran_hypergeometric_pdf
 - rng.finc, [789](#)
- gsl_ran_landau
 - rng.finc, [790](#)
- gsl_ran_landau_pdf
 - rng.finc, [790](#)
- gsl_ran_laplace
 - rng.finc, [790](#)
- gsl_ran_laplace_pdf
 - rng.finc, [790](#)
- gsl_ran_levy
 - rng.finc, [790](#)
- gsl_ran_levy_skew
 - rng.finc, [790](#)
- gsl_ran_logarithmic
 - rng.finc, [791](#)
- gsl_ran_logarithmic_pdf
 - rng.finc, [791](#)
- gsl_ran_logistic
 - rng.finc, [791](#)
- gsl_ran_logistic_pdf
 - rng.finc, [791](#)
- gsl_ran_lognormal
 - rng.finc, [791](#)
- gsl_ran_lognormal_pdf
 - rng.finc, [791](#)
- gsl_ran_multinomial
 - rng.finc, [792](#)
- gsl_ran_multinomial_lnpdf
 - rng.finc, [792](#)
- gsl_ran_multinomial_pdf
 - rng.finc, [792](#)
- gsl_ran_multivariate_gaussian
 - rng.finc, [792](#)
- gsl_ran_multivariate_gaussian_log_pdf
 - rng.finc, [792](#)
- gsl_ran_multivariate_gaussian_mean
 - rng.finc, [793](#)
- gsl_ran_multivariate_gaussian_pdf
 - rng.finc, [793](#)
- gsl_ran_multivariate_gaussian_vcov
 - rng.finc, [793](#)
- gsl_ran_negative_binomial
 - rng.finc, [793](#)
- gsl_ran_negative_binomial_pdf
 - rng.finc, [793](#)
- gsl_ran_pareto
 - rng.finc, [794](#)
- gsl_ran_pareto_pdf
 - rng.finc, [794](#)
- gsl_ran_pascal
 - rng.finc, [794](#)
- gsl_ran_pascal_pdf
 - rng.finc, [794](#)
- gsl_ran_poisson
 - rng.finc, [794](#)
- gsl_ran_poisson_pdf
 - rng.finc, [794](#)

- rng.finc, [794](#)
- gsl_ran_rayleigh
 - rng.finc, [795](#)
- gsl_ran_rayleigh_pdf
 - rng.finc, [795](#)
- gsl_ran_rayleigh_tail
 - rng.finc, [795](#)
- gsl_ran_rayleigh_tail_pdf
 - rng.finc, [795](#)
- gsl_ran_sample
 - rng.finc, [795](#)
- gsl_ran_shuffle
 - rng.finc, [795](#)
- gsl_ran_tdist
 - rng.finc, [796](#)
- gsl_ran_tdist_pdf
 - rng.finc, [796](#)
- gsl_ran_ugaussian
 - rng.finc, [796](#)
- gsl_ran_ugaussian_pdf
 - rng.finc, [796](#)
- gsl_ran_ugaussian_ratio_method
 - rng.finc, [796](#)
- gsl_ran_ugaussian_tail
 - rng.finc, [796](#)
- gsl_ran_ugaussian_tail_pdf
 - rng.finc, [797](#)
- gsl_ran_weibull
 - rng.finc, [797](#)
- gsl_ran_weibull_pdf
 - rng.finc, [797](#)
- gsl_ran_wishart
 - rng.finc, [797](#)
- gsl_ran_wishart_log_pdf
 - rng.finc, [797](#)
- gsl_ran_wishart_pdf
 - rng.finc, [798](#)
- gsl_rng
 - fgsl::fgsl_rng, [243](#)
- gsl_rng_alloc
 - rng.finc, [798](#)
- gsl_rng_clone
 - rng.finc, [798](#)
- gsl_rng_env_setup
 - rng.finc, [798](#)
- gsl_rng_fread
 - rng.finc, [798](#)
- gsl_rng_free
 - rng.finc, [798](#)
- gsl_rng_fwrite
 - rng.finc, [799](#)
- gsl_rng_get
 - rng.finc, [799](#)
- gsl_rng_max
 - rng.finc, [799](#)
- gsl_rng_memcpy
 - rng.finc, [799](#)
- gsl_rng_min
 - rng.finc, [799](#)
- gsl_rng_name
 - rng.finc, [799](#)
- gsl_rng_set
 - rng.finc, [799](#)
- gsl_rng_type
 - fgsl::fgsl_rng_type, [243](#)
- gsl_rng_uniform
 - rng.finc, [800](#)
- gsl_rng_uniform_int
 - rng.finc, [800](#)
- gsl_rng_uniform_pos
 - rng.finc, [800](#)
- gsl_root_fdfsolver
 - fgsl::fgsl_root_fdfsolver, [244](#)
- gsl_root_fdfsolver_alloc
 - roots.finc, [805](#)
- gsl_root_fdfsolver_free
 - roots.finc, [805](#)
- gsl_root_fdfsolver_iterate
 - roots.finc, [805](#)
- gsl_root_fdfsolver_name
 - roots.finc, [805](#)
- gsl_root_fdfsolver_root
 - roots.finc, [805](#)
- gsl_root_fdfsolver_set
 - roots.finc, [805](#)
- gsl_root_fsolver
 - fgsl::fgsl_root_fsolver, [245](#)
- gsl_root_fsolver_alloc
 - roots.finc, [805](#)
- gsl_root_fsolver_free
 - roots.finc, [806](#)
- gsl_root_fsolver_iterate
 - roots.finc, [806](#)
- gsl_root_fsolver_name
 - roots.finc, [806](#)
- gsl_root_fsolver_root
 - roots.finc, [806](#)
- gsl_root_fsolver_set
 - roots.finc, [806](#)
- gsl_root_fsolver_x_lower
 - roots.finc, [806](#)
- gsl_root_fsolver_x_upper
 - roots.finc, [807](#)
- gsl_root_test_delta
 - roots.finc, [807](#)
- gsl_root_test_interval
 - roots.finc, [807](#)
- gsl_root_test_residual
 - roots.finc, [807](#)
- gsl_rstat_add
 - rstat.finc, [812](#)
- gsl_rstat_alloc
 - rstat.finc, [812](#)
- gsl_rstat_free
 - rstat.finc, [812](#)
- gsl_rstat_kurtosis

- rstat.finc, [812](#)
- gsl_rstat_max
 - rstat.finc, [812](#)
- gsl_rstat_mean
 - rstat.finc, [812](#)
- gsl_rstat_median
 - rstat.finc, [813](#)
- gsl_rstat_min
 - rstat.finc, [813](#)
- gsl_rstat_n
 - rstat.finc, [813](#)
- gsl_rstat_quantile_add
 - rstat.finc, [813](#)
- gsl_rstat_quantile_alloc
 - rstat.finc, [813](#)
- gsl_rstat_quantile_free
 - rstat.finc, [813](#)
- gsl_rstat_quantile_get
 - rstat.finc, [813](#)
- gsl_rstat_quantile_reset
 - rstat.finc, [814](#)
- gsl_rstat_quantile_workspace
 - fgsl::fgsl_rstat_quantile_workspace, [245](#)
- gsl_rstat_reset
 - rstat.finc, [814](#)
- gsl_rstat_rms
 - rstat.finc, [814](#)
- gsl_rstat_sd
 - rstat.finc, [814](#)
- gsl_rstat_sd_mean
 - rstat.finc, [814](#)
- gsl_rstat_skew
 - rstat.finc, [814](#)
- gsl_rstat_variance
 - rstat.finc, [814](#)
- gsl_rstat_workspace
 - fgsl::fgsl_rstat_workspace, [246](#)
- gsl_set_error_handler
 - error.finc, [345](#)
- gsl_set_error_handler_off
 - error.finc, [345](#)
- gsl_sf_airy_ai
 - specfunc.finc, [933](#)
- gsl_sf_airy_ai_deriv
 - specfunc.finc, [933](#)
- gsl_sf_airy_ai_deriv_e
 - specfunc.finc, [933](#)
- gsl_sf_airy_ai_deriv_scaled
 - specfunc.finc, [934](#)
- gsl_sf_airy_ai_deriv_scaled_e
 - specfunc.finc, [934](#)
- gsl_sf_airy_ai_e
 - specfunc.finc, [934](#)
- gsl_sf_airy_ai_scaled
 - specfunc.finc, [934](#)
- gsl_sf_airy_ai_scaled_e
 - specfunc.finc, [934](#)
- gsl_sf_airy_bi
 - specfunc.finc, [934](#)
- gsl_sf_airy_bi_deriv
 - specfunc.finc, [935](#)
- gsl_sf_airy_bi_deriv_e
 - specfunc.finc, [935](#)
- gsl_sf_airy_bi_deriv_scaled
 - specfunc.finc, [935](#)
- gsl_sf_airy_bi_deriv_scaled_e
 - specfunc.finc, [935](#)
- gsl_sf_airy_bi_e
 - specfunc.finc, [935](#)
- gsl_sf_airy_bi_scaled
 - specfunc.finc, [935](#)
- gsl_sf_airy_bi_scaled_e
 - specfunc.finc, [936](#)
- gsl_sf_airy_zero_ai
 - specfunc.finc, [936](#)
- gsl_sf_airy_zero_ai_deriv
 - specfunc.finc, [936](#)
- gsl_sf_airy_zero_ai_deriv_e
 - specfunc.finc, [936](#)
- gsl_sf_airy_zero_ai_e
 - specfunc.finc, [936](#)
- gsl_sf_airy_zero_bi
 - specfunc.finc, [936](#)
- gsl_sf_airy_zero_bi_deriv
 - specfunc.finc, [937](#)
- gsl_sf_airy_zero_bi_deriv_e
 - specfunc.finc, [937](#)
- gsl_sf_airy_zero_bi_e
 - specfunc.finc, [937](#)
- gsl_sf_angle_restrict_pos_e
 - specfunc.finc, [937](#)
- gsl_sf_angle_restrict_symm_e
 - specfunc.finc, [937](#)
- gsl_sf_atanint_e
 - specfunc.finc, [937](#)
- gsl_sf_bessel_ic0_e
 - specfunc.finc, [938](#)
- gsl_sf_bessel_ic0_scaled_e
 - specfunc.finc, [938](#)
- gsl_sf_bessel_ic1_e
 - specfunc.finc, [938](#)
- gsl_sf_bessel_ic1_scaled_e
 - specfunc.finc, [938](#)
- gsl_sf_bessel_ich_e
 - specfunc.finc, [938](#)
- gsl_sf_bessel_ich_scaled_e
 - specfunc.finc, [938](#)
- gsl_sf_bessel_inu_e
 - specfunc.finc, [939](#)
- gsl_sf_bessel_inu_scaled_e
 - specfunc.finc, [939](#)
- gsl_sf_bessel_is0_scaled_e
 - specfunc.finc, [939](#)
- gsl_sf_bessel_is1_scaled_e
 - specfunc.finc, [939](#)
- gsl_sf_bessel_is2_scaled_e
 - specfunc.finc, [939](#)

- specfunc.finc, [939](#)
- gsl_sf_bessel_isl_scaled_e
 - specfunc.finc, [939](#)
- gsl_sf_bessel_jc0_e
 - specfunc.finc, [940](#)
- gsl_sf_bessel_jc1_e
 - specfunc.finc, [940](#)
- gsl_sf_bessel_jcn_e
 - specfunc.finc, [940](#)
- gsl_sf_bessel_jnu_e
 - specfunc.finc, [940](#)
- gsl_sf_bessel_js0_e
 - specfunc.finc, [940](#)
- gsl_sf_bessel_js1_e
 - specfunc.finc, [940](#)
- gsl_sf_bessel_js2_e
 - specfunc.finc, [941](#)
- gsl_sf_bessel_jsl_e
 - specfunc.finc, [941](#)
- gsl_sf_bessel_kc0_e
 - specfunc.finc, [941](#)
- gsl_sf_bessel_kc0_scaled_e
 - specfunc.finc, [941](#)
- gsl_sf_bessel_kc1_e
 - specfunc.finc, [941](#)
- gsl_sf_bessel_kc1_scaled_e
 - specfunc.finc, [941](#)
- gsl_sf_bessel_kcn_e
 - specfunc.finc, [942](#)
- gsl_sf_bessel_kcn_scaled_e
 - specfunc.finc, [942](#)
- gsl_sf_bessel_knu_e
 - specfunc.finc, [942](#)
- gsl_sf_bessel_knu_scaled_e
 - specfunc.finc, [942](#)
- gsl_sf_bessel_ks0_scaled_e
 - specfunc.finc, [942](#)
- gsl_sf_bessel_ks1_scaled_e
 - specfunc.finc, [942](#)
- gsl_sf_bessel_ks2_scaled_e
 - specfunc.finc, [943](#)
- gsl_sf_bessel_ksl_scaled_e
 - specfunc.finc, [943](#)
- gsl_sf_bessel_lnknu_e
 - specfunc.finc, [943](#)
- gsl_sf_bessel_sequence_jnu_e
 - specfunc.finc, [943](#)
- gsl_sf_bessel_yc0_e
 - specfunc.finc, [943](#)
- gsl_sf_bessel_yc1_e
 - specfunc.finc, [943](#)
- gsl_sf_bessel_ycn_e
 - specfunc.finc, [944](#)
- gsl_sf_bessel_ynu_e
 - specfunc.finc, [944](#)
- gsl_sf_bessel_ys0_e
 - specfunc.finc, [944](#)
- gsl_sf_bessel_ys1_e
 - specfunc.finc, [944](#)
- gsl_sf_bessel_ys2_e
 - specfunc.finc, [944](#)
- gsl_sf_bessel_ysl_e
 - specfunc.finc, [944](#)
- gsl_sf_bessel_zero_jc0_e
 - specfunc.finc, [945](#)
- gsl_sf_bessel_zero_jc1_e
 - specfunc.finc, [945](#)
- gsl_sf_bessel_zero_jnu_e
 - specfunc.finc, [945](#)
- gsl_sf_beta_e
 - specfunc.finc, [945](#)
- gsl_sf_beta_inc_e
 - specfunc.finc, [945](#)
- gsl_sf_chi_e
 - specfunc.finc, [945](#)
- gsl_sf_choose_e
 - specfunc.finc, [946](#)
- gsl_sf_ci_e
 - specfunc.finc, [946](#)
- gsl_sf_clausen_e
 - specfunc.finc, [946](#)
- gsl_sf_complex_cos_e
 - specfunc.finc, [946](#)
- gsl_sf_complex_dilog_e
 - specfunc.finc, [946](#)
- gsl_sf_complex_log_e
 - specfunc.finc, [946](#)
- gsl_sf_complex_logsin_e
 - specfunc.finc, [947](#)
- gsl_sf_complex_sin_e
 - specfunc.finc, [947](#)
- gsl_sf_conicalp_0_e
 - specfunc.finc, [947](#)
- gsl_sf_conicalp_1_e
 - specfunc.finc, [947](#)
- gsl_sf_conicalp_cyl_reg_e
 - specfunc.finc, [947](#)
- gsl_sf_conicalp_half_e
 - specfunc.finc, [948](#)
- gsl_sf_conicalp_mhalf_e
 - specfunc.finc, [948](#)
- gsl_sf_conicalp_sph_reg_e
 - specfunc.finc, [948](#)
- gsl_sf_cos_err_e
 - specfunc.finc, [948](#)
- gsl_sf_coulomb_cl_array
 - specfunc.finc, [948](#)
- gsl_sf_coulomb_cl_e
 - specfunc.finc, [949](#)
- gsl_sf_coulomb_wave_f_array
 - specfunc.finc, [949](#)
- gsl_sf_coulomb_wave_fg_array
 - specfunc.finc, [949](#)
- gsl_sf_coulomb_wave_fg_e
 - specfunc.finc, [949](#)
- gsl_sf_coulomb_wave_fgp_array

- specfunc.finc, 950
- gsl_sf_coulomb_wave_sphf_array
 - specfunc.finc, 950
- gsl_sf_coupling_3j_e
 - specfunc.finc, 950
- gsl_sf_coupling_6j_e
 - specfunc.finc, 950
- gsl_sf_coupling_9j_e
 - specfunc.finc, 951
- gsl_sf_dawson_e
 - specfunc.finc, 951
- gsl_sf_debye_1_e
 - specfunc.finc, 951
- gsl_sf_debye_2_e
 - specfunc.finc, 951
- gsl_sf_debye_3_e
 - specfunc.finc, 951
- gsl_sf_debye_4_e
 - specfunc.finc, 952
- gsl_sf_debye_5_e
 - specfunc.finc, 952
- gsl_sf_debye_6_e
 - specfunc.finc, 952
- gsl_sf_dilog_e
 - specfunc.finc, 952
- gsl_sf_doublefact_e
 - specfunc.finc, 952
- gsl_sf_ellint_d
 - specfunc.finc, 952
- gsl_sf_ellint_d_e
 - specfunc.finc, 953
- gsl_sf_ellint_e
 - specfunc.finc, 953
- gsl_sf_ellint_e_e
 - specfunc.finc, 953
- gsl_sf_ellint_ecomp
 - specfunc.finc, 953
- gsl_sf_ellint_ecomp_e
 - specfunc.finc, 953
- gsl_sf_ellint_f
 - specfunc.finc, 954
- gsl_sf_ellint_f_e
 - specfunc.finc, 954
- gsl_sf_ellint_kcomp
 - specfunc.finc, 954
- gsl_sf_ellint_kcomp_e
 - specfunc.finc, 954
- gsl_sf_ellint_p
 - specfunc.finc, 954
- gsl_sf_ellint_p_e
 - specfunc.finc, 955
- gsl_sf_ellint_pcomp
 - specfunc.finc, 955
- gsl_sf_ellint_pcomp_e
 - specfunc.finc, 955
- gsl_sf_ellint_rc
 - specfunc.finc, 955
- gsl_sf_ellint_rc_e
 - specfunc.finc, 955
- gsl_sf_ellint_rd
 - specfunc.finc, 956
- gsl_sf_ellint_rd_e
 - specfunc.finc, 956
- gsl_sf_ellint_rf
 - specfunc.finc, 956
- gsl_sf_ellint_rf_e
 - specfunc.finc, 956
- gsl_sf_ellint_rj
 - specfunc.finc, 956
- gsl_sf_ellint_rj_e
 - specfunc.finc, 957
- gsl_sf_erf_e
 - specfunc.finc, 957
- gsl_sf_erf_q_e
 - specfunc.finc, 957
- gsl_sf_erf_z_e
 - specfunc.finc, 957
- gsl_sf_erfc_e
 - specfunc.finc, 957
- gsl_sf_eta_e
 - specfunc.finc, 958
- gsl_sf_eta_int_e
 - specfunc.finc, 958
- gsl_sf_exp_e
 - specfunc.finc, 958
- gsl_sf_exp_e10_e
 - specfunc.finc, 958
- gsl_sf_exp_err_e
 - specfunc.finc, 958
- gsl_sf_exp_err_e10_e
 - specfunc.finc, 958
- gsl_sf_exp_mult_e
 - specfunc.finc, 959
- gsl_sf_exp_mult_e10_e
 - specfunc.finc, 959
- gsl_sf_exp_mult_err_e
 - specfunc.finc, 959
- gsl_sf_exp_mult_err_e10_e
 - specfunc.finc, 959
- gsl_sf_expint_3_e
 - specfunc.finc, 959
- gsl_sf_expint_e1_e
 - specfunc.finc, 960
- gsl_sf_expint_e2_e
 - specfunc.finc, 960
- gsl_sf_expint_ei_e
 - specfunc.finc, 960
- gsl_sf_expint_en_e
 - specfunc.finc, 960
- gsl_sf_expm1_e
 - specfunc.finc, 960
- gsl_sf_exprel_2_e
 - specfunc.finc, 960
- gsl_sf_exprel_e
 - specfunc.finc, 961
- gsl_sf_exprel_n_e
 - specfunc.finc, 961

- specfunc.finc, [961](#)
- gsl_sf_fact_e
 - specfunc.finc, [961](#)
- gsl_sf_fermi_dirac_0_e
 - specfunc.finc, [961](#)
- gsl_sf_fermi_dirac_1_e
 - specfunc.finc, [961](#)
- gsl_sf_fermi_dirac_2_e
 - specfunc.finc, [961](#)
- gsl_sf_fermi_dirac_3half_e
 - specfunc.finc, [962](#)
- gsl_sf_fermi_dirac_half_e
 - specfunc.finc, [962](#)
- gsl_sf_fermi_dirac_inc_0_e
 - specfunc.finc, [962](#)
- gsl_sf_fermi_dirac_int_e
 - specfunc.finc, [962](#)
- gsl_sf_fermi_dirac_m1_e
 - specfunc.finc, [962](#)
- gsl_sf_fermi_dirac_mhalf_e
 - specfunc.finc, [962](#)
- gsl_sf_gamma_e
 - specfunc.finc, [963](#)
- gsl_sf_gamma_inc_e
 - specfunc.finc, [963](#)
- gsl_sf_gamma_inc_p_e
 - specfunc.finc, [963](#)
- gsl_sf_gamma_inc_q_e
 - specfunc.finc, [963](#)
- gsl_sf_gammainv_e
 - specfunc.finc, [963](#)
- gsl_sf_gammastar_e
 - specfunc.finc, [963](#)
- gsl_sf_gegenpoly_1_e
 - specfunc.finc, [964](#)
- gsl_sf_gegenpoly_2_e
 - specfunc.finc, [964](#)
- gsl_sf_gegenpoly_3_e
 - specfunc.finc, [964](#)
- gsl_sf_gegenpoly_array
 - specfunc.finc, [964](#)
- gsl_sf_gegenpoly_n_e
 - specfunc.finc, [964](#)
- gsl_sf_hazard_e
 - specfunc.finc, [965](#)
- gsl_sf_hermite_deriv_e
 - specfunc.finc, [965](#)
- gsl_sf_hermite_e
 - specfunc.finc, [965](#)
- gsl_sf_hermite_func_e
 - specfunc.finc, [965](#)
- gsl_sf_hermite_func_fast_e
 - specfunc.finc, [965](#)
- gsl_sf_hermite_func_series_e
 - specfunc.finc, [966](#)
- gsl_sf_hermite_phys_e
 - specfunc.finc, [966](#)
- gsl_sf_hermite_phys_series_e
 - specfunc.finc, [966](#)
- gsl_sf_hermite_prob_deriv_e
 - specfunc.finc, [966](#)
- gsl_sf_hermite_prob_e
 - specfunc.finc, [966](#)
- gsl_sf_hermite_prob_series_e
 - specfunc.finc, [967](#)
- gsl_sf_hermite_prob_zero_e
 - specfunc.finc, [967](#)
- gsl_sf_hermite_series_e
 - specfunc.finc, [967](#)
- gsl_sf_hermite_zero_e
 - specfunc.finc, [967](#)
- gsl_sf_hydrogenicr_1_e
 - specfunc.finc, [967](#)
- gsl_sf_hydrogenicr_e
 - specfunc.finc, [968](#)
- gsl_sf_hyperg_0f1_e
 - specfunc.finc, [968](#)
- gsl_sf_hyperg_1f1_e
 - specfunc.finc, [968](#)
- gsl_sf_hyperg_1f1_int_e
 - specfunc.finc, [968](#)
- gsl_sf_hyperg_2f0_e
 - specfunc.finc, [968](#)
- gsl_sf_hyperg_2f1_conj_e
 - specfunc.finc, [969](#)
- gsl_sf_hyperg_2f1_conj_renorm_e
 - specfunc.finc, [969](#)
- gsl_sf_hyperg_2f1_e
 - specfunc.finc, [969](#)
- gsl_sf_hyperg_2f1_renorm_e
 - specfunc.finc, [969](#)
- gsl_sf_hyperg_u_e
 - specfunc.finc, [969](#)
- gsl_sf_hyperg_u_e10_e
 - specfunc.finc, [970](#)
- gsl_sf_hyperg_u_int_e
 - specfunc.finc, [970](#)
- gsl_sf_hyperg_u_int_e10_e
 - specfunc.finc, [970](#)
- gsl_sf_hypot_e
 - specfunc.finc, [970](#)
- gsl_sf_hzeta_e
 - specfunc.finc, [970](#)
- gsl_sf_laguerre_1_e
 - specfunc.finc, [971](#)
- gsl_sf_laguerre_2_e
 - specfunc.finc, [971](#)
- gsl_sf_laguerre_3_e
 - specfunc.finc, [971](#)
- gsl_sf_laguerre_n_e
 - specfunc.finc, [971](#)
- gsl_sf_lambert_w0_e
 - specfunc.finc, [971](#)
- gsl_sf_lambert_wm1_e
 - specfunc.finc, [972](#)
- gsl_sf_legendre_array

- specfunc.finc, 972
- gsl_sf_legendre_array_e
 - specfunc.finc, 972
- gsl_sf_legendre_deriv2_alt_array
 - specfunc.finc, 972
- gsl_sf_legendre_deriv2_alt_array_e
 - specfunc.finc, 972
- gsl_sf_legendre_deriv2_array
 - specfunc.finc, 973
- gsl_sf_legendre_deriv2_array_e
 - specfunc.finc, 973
- gsl_sf_legendre_deriv_alt_array
 - specfunc.finc, 973
- gsl_sf_legendre_deriv_alt_array_e
 - specfunc.finc, 973
- gsl_sf_legendre_deriv_array
 - specfunc.finc, 974
- gsl_sf_legendre_deriv_array_e
 - specfunc.finc, 974
- gsl_sf_legendre_full
 - fgsl, 176
- gsl_sf_legendre_h3d_0_e
 - specfunc.finc, 974
- gsl_sf_legendre_h3d_1_e
 - specfunc.finc, 974
- gsl_sf_legendre_h3d_array
 - specfunc.finc, 974
- gsl_sf_legendre_h3d_e
 - specfunc.finc, 975
- gsl_sf_legendre_none
 - fgsl, 176
- gsl_sf_legendre_p1_e
 - specfunc.finc, 975
- gsl_sf_legendre_p2_e
 - specfunc.finc, 975
- gsl_sf_legendre_p3_e
 - specfunc.finc, 975
- gsl_sf_legendre_pl_array
 - specfunc.finc, 975
- gsl_sf_legendre_pl_deriv_array
 - specfunc.finc, 975
- gsl_sf_legendre_pl_e
 - specfunc.finc, 976
- gsl_sf_legendre_plm_e
 - specfunc.finc, 976
- gsl_sf_legendre_q0_e
 - specfunc.finc, 976
- gsl_sf_legendre_q1_e
 - specfunc.finc, 976
- gsl_sf_legendre_ql_e
 - specfunc.finc, 976
- gsl_sf_legendre_schmidt
 - fgsl, 176
- gsl_sf_legendre_spharm
 - fgsl, 176
- gsl_sf_legendre_sphplm_e
 - specfunc.finc, 976
- gsl_sf_legendre_t
 - fgsl::fgsl_sf_legendre_t, 246
- gsl_sf_lnbeta_e
 - specfunc.finc, 977
- gsl_sf_lnchoose_e
 - specfunc.finc, 977
- gsl_sf_lncosh_e
 - specfunc.finc, 977
- gsl_sf_lndoublefact_e
 - specfunc.finc, 977
- gsl_sf_lnfact_e
 - specfunc.finc, 977
- gsl_sf_lngamma_complex_e
 - specfunc.finc, 977
- gsl_sf_lngamma_e
 - specfunc.finc, 978
- gsl_sf_lngamma_sgn_e
 - specfunc.finc, 978
- gsl_sf_lnpoch_e
 - specfunc.finc, 978
- gsl_sf_lnpoch_sgn_e
 - specfunc.finc, 978
- gsl_sf_lnsinh_e
 - specfunc.finc, 978
- gsl_sf_log_1plusx_e
 - specfunc.finc, 979
- gsl_sf_log_1plusx_mx_e
 - specfunc.finc, 979
- gsl_sf_log_abs_e
 - specfunc.finc, 979
- gsl_sf_log_e
 - specfunc.finc, 979
- gsl_sf_log_erfc_e
 - specfunc.finc, 979
- gsl_sf_mathieu_a_array
 - specfunc.finc, 979
- gsl_sf_mathieu_a_e
 - specfunc.finc, 980
- gsl_sf_mathieu_alloc
 - specfunc.finc, 980
- gsl_sf_mathieu_b_array
 - specfunc.finc, 980
- gsl_sf_mathieu_b_e
 - specfunc.finc, 980
- gsl_sf_mathieu_ce_array
 - specfunc.finc, 980
- gsl_sf_mathieu_ce_e
 - specfunc.finc, 981
- gsl_sf_mathieu_free
 - specfunc.finc, 981
- gsl_sf_mathieu_mc_array
 - specfunc.finc, 981
- gsl_sf_mathieu_mc_e
 - specfunc.finc, 981
- gsl_sf_mathieu_ms_array
 - specfunc.finc, 981
- gsl_sf_mathieu_ms_e
 - specfunc.finc, 982
- gsl_sf_mathieu_se_array

- specfunc.finc, [982](#)
- gsl_sf_mathieu_se_e
 - specfunc.finc, [982](#)
- gsl_sf_mathieu_workspace
 - fgsl::fgsl_sf_mathieu_workspace, [247](#)
- gsl_sf_multiply_e
 - specfunc.finc, [982](#)
- gsl_sf_multiply_err_e
 - specfunc.finc, [982](#)
- gsl_sf_poch_e
 - specfunc.finc, [983](#)
- gsl_sf_pochrel_e
 - specfunc.finc, [983](#)
- gsl_sf_polar_to_rect
 - specfunc.finc, [983](#)
- gsl_sf_psi_1_e
 - specfunc.finc, [983](#)
- gsl_sf_psi_1_int_e
 - specfunc.finc, [983](#)
- gsl_sf_psi_1piy_e
 - specfunc.finc, [984](#)
- gsl_sf_psi_e
 - specfunc.finc, [984](#)
- gsl_sf_psi_int_e
 - specfunc.finc, [984](#)
- gsl_sf_psi_n_e
 - specfunc.finc, [984](#)
- gsl_sf_rect_to_polar
 - specfunc.finc, [984](#)
- gsl_sf_shi_e
 - specfunc.finc, [984](#)
- gsl_sf_si_e
 - specfunc.finc, [985](#)
- gsl_sf_sin_err_e
 - specfunc.finc, [985](#)
- gsl_sf_sinc_e
 - specfunc.finc, [985](#)
- gsl_sf_synchrotron_1_e
 - specfunc.finc, [985](#)
- gsl_sf_synchrotron_2_e
 - specfunc.finc, [985](#)
- gsl_sf_taylorcoeff_e
 - specfunc.finc, [985](#)
- gsl_sf_to_fgsl_sf
 - assignment(=), [182](#)
 - specfunc.finc, [886](#)
- gsl_sf_transport_2_e
 - specfunc.finc, [986](#)
- gsl_sf_transport_3_e
 - specfunc.finc, [986](#)
- gsl_sf_transport_4_e
 - specfunc.finc, [986](#)
- gsl_sf_transport_5_e
 - specfunc.finc, [986](#)
- gsl_sf_zeta_e
 - specfunc.finc, [986](#)
- gsl_sf_zeta_int_e
 - specfunc.finc, [986](#)
- gsl_sf_zetam1_e
 - specfunc.finc, [987](#)
- gsl_sf_zetam1_int_e
 - specfunc.finc, [987](#)
- gsl_sfe10_to_fgsl_sfe10
 - assignment(=), [182](#)
 - specfunc.finc, [887](#)
- gsl_siman_params_t
 - fgsl::fgsl_siman_params_t, [249](#)
- gsl_siman_solve
 - siman.finc, [816](#)
- gsl_sort
 - sort.finc, [823](#)
- gsl_sort2
 - sort.finc, [823](#)
- gsl_sort_index
 - sort.finc, [823](#)
- gsl_sort_largest
 - sort.finc, [824](#)
- gsl_sort_largest_index
 - sort.finc, [824](#)
- gsl_sort_long
 - sort.finc, [824](#)
- gsl_sort_long_index
 - sort.finc, [824](#)
- gsl_sort_long_largest
 - sort.finc, [824](#)
- gsl_sort_long_largest_index
 - sort.finc, [825](#)
- gsl_sort_long_smallest
 - sort.finc, [825](#)
- gsl_sort_long_smallest_index
 - sort.finc, [825](#)
- gsl_sort_smallest
 - sort.finc, [825](#)
- gsl_sort_smallest_index
 - sort.finc, [825](#)
- gsl_sort_vector
 - sort.finc, [826](#)
- gsl_sort_vector2
 - sort.finc, [826](#)
- gsl_sort_vector_index
 - sort.finc, [826](#)
- gsl_sort_vector_largest
 - sort.finc, [826](#)
- gsl_sort_vector_largest_index
 - sort.finc, [826](#)
- gsl_sort_vector_smallest
 - sort.finc, [826](#)
- gsl_sort_vector_smallest_index
 - sort.finc, [827](#)
- gsl_spblas_dgemm
 - spmatrix.finc, [998](#)
- gsl_spblas_dgemv
 - spmatrix.finc, [998](#)
- gsl_splinalg_itsolve
 - fgsl::fgsl_splinalg_itsolve, [256](#)
- gsl_splinalg_itsolve_alloc

- splinalg.finc, 989
- gsl_splinalg_itsolve_free
 - splinalg.finc, 989
- gsl_splinalg_itsolve_iterate
 - splinalg.finc, 989
- gsl_splinalg_itsolve_name
 - splinalg.finc, 989
- gsl_splinalg_itsolve_normr
 - splinalg.finc, 990
- gsl_spline
 - fgsl::fgsl_spline, 257
- gsl_spline2d
 - fgsl::fgsl_spline2d, 258
- gsl_spline2d_alloc
 - interp.finc, 448
- gsl_spline2d_eval
 - interp.finc, 448
- gsl_spline2d_eval_deriv_x
 - interp.finc, 448
- gsl_spline2d_eval_deriv_x_e
 - interp.finc, 448
- gsl_spline2d_eval_deriv_xx
 - interp.finc, 449
- gsl_spline2d_eval_deriv_xx_e
 - interp.finc, 449
- gsl_spline2d_eval_deriv_xy
 - interp.finc, 449
- gsl_spline2d_eval_deriv_xy_e
 - interp.finc, 449
- gsl_spline2d_eval_deriv_y
 - interp.finc, 449
- gsl_spline2d_eval_deriv_y_e
 - interp.finc, 450
- gsl_spline2d_eval_deriv_yy
 - interp.finc, 450
- gsl_spline2d_eval_deriv_yy_e
 - interp.finc, 450
- gsl_spline2d_eval_e
 - interp.finc, 450
- gsl_spline2d_eval_extrap
 - interp.finc, 450
- gsl_spline2d_eval_extrap_e
 - interp.finc, 451
- gsl_spline2d_free
 - interp.finc, 451
- gsl_spline2d_get
 - interp.finc, 451
- gsl_spline2d_init
 - interp.finc, 451
- gsl_spline2d_min_size
 - interp.finc, 451
- gsl_spline2d_name
 - interp.finc, 452
- gsl_spline2d_set
 - interp.finc, 452
- gsl_spline_alloc
 - interp.finc, 452
- gsl_spline_eval
 - interp.finc, 452
- gsl_spline_eval_deriv
 - interp.finc, 452
- gsl_spline_eval_deriv2
 - interp.finc, 452
- gsl_spline_eval_deriv2_e
 - interp.finc, 453
- gsl_spline_eval_deriv_e
 - interp.finc, 453
- gsl_spline_eval_e
 - interp.finc, 453
- gsl_spline_eval_integ
 - interp.finc, 453
- gsl_spline_eval_integ_e
 - interp.finc, 453
- gsl_spline_free
 - interp.finc, 454
- gsl_spline_init
 - interp.finc, 454
- gsl_spline_min_size
 - interp.finc, 454
- gsl_spline_name
 - interp.finc, 454
- gsl_spmatrix
 - fgsl::fgsl_spmatrix, 258
- gsl_spmatrix_add
 - spmatrix.finc, 999
- gsl_spmatrix_alloc
 - spmatrix.finc, 999
- gsl_spmatrix_alloc_nzmax
 - spmatrix.finc, 999
- gsl_spmatrix_compcol
 - spmatrix.finc, 999
- gsl_spmatrix_compress
 - spmatrix.finc, 999
- gsl_spmatrix_csc
 - spmatrix.finc, 1000
- gsl_spmatrix_csr
 - spmatrix.finc, 1000
- gsl_spmatrix_cumsum
 - spmatrix.finc, 1000
- gsl_spmatrix_d2sp
 - spmatrix.finc, 1000
- gsl_spmatrix_dense_add
 - spmatrix.finc, 1000
- gsl_spmatrix_dense_sub
 - spmatrix.finc, 1000
- gsl_spmatrix_equal
 - spmatrix.finc, 1001
- gsl_spmatrix_fprintf
 - spmatrix.finc, 1001
- gsl_spmatrix_fread
 - spmatrix.finc, 1001
- gsl_spmatrix_free
 - spmatrix.finc, 1001
- gsl_spmatrix_fscanf
 - spmatrix.finc, 1001
- gsl_spmatrix_fwrite

- spmatrix.finc, [1001](#)
- gsl_spmatrix_get
 - spmatrix.finc, [1002](#)
- gsl_spmatrix_memcpy
 - spmatrix.finc, [1002](#)
- gsl_spmatrix_min_index
 - spmatrix.finc, [1002](#)
- gsl_spmatrix_minmax
 - spmatrix.finc, [1002](#)
- gsl_spmatrix_nnz
 - spmatrix.finc, [1002](#)
- gsl_spmatrix_norm1
 - spmatrix.finc, [1002](#)
- gsl_spmatrix_realloc
 - spmatrix.finc, [1003](#)
- gsl_spmatrix_scale
 - spmatrix.finc, [1003](#)
- gsl_spmatrix_scale_columns
 - spmatrix.finc, [1003](#)
- gsl_spmatrix_scale_rows
 - spmatrix.finc, [1003](#)
- gsl_spmatrix_set
 - spmatrix.finc, [1003](#)
- gsl_spmatrix_set_zero
 - spmatrix.finc, [1003](#)
- gsl_spmatrix_size
 - spmatrix.finc, [1004](#)
- gsl_spmatrix_sp2d
 - spmatrix.finc, [1004](#)
- gsl_spmatrix_transpose
 - spmatrix.finc, [1004](#)
- gsl_spmatrix_transpose_memcpy
 - spmatrix.finc, [1004](#)
- gsl_stats_absdev
 - statistics.finc, [1017](#)
- gsl_stats_absdev_m
 - statistics.finc, [1017](#)
- gsl_stats_correlation
 - statistics.finc, [1018](#)
- gsl_stats_covariance
 - statistics.finc, [1018](#)
- gsl_stats_covariance_m
 - statistics.finc, [1018](#)
- gsl_stats_kurtosis
 - statistics.finc, [1018](#)
- gsl_stats_kurtosis_m_sd
 - statistics.finc, [1018](#)
- gsl_stats_lag1_autocorrelation
 - statistics.finc, [1019](#)
- gsl_stats_lag1_autocorrelation_m
 - statistics.finc, [1019](#)
- gsl_stats_max
 - statistics.finc, [1019](#)
- gsl_stats_max_index
 - statistics.finc, [1019](#)
- gsl_stats_mean
 - statistics.finc, [1019](#)
- gsl_stats_median_from_sorted_data
 - statistics.finc, [1020](#)
- gsl_stats_min
 - statistics.finc, [1020](#)
- gsl_stats_min_index
 - statistics.finc, [1020](#)
- gsl_stats_minmax
 - statistics.finc, [1020](#)
- gsl_stats_minmax_index
 - statistics.finc, [1020](#)
- gsl_stats_quantile_from_sorted_data
 - statistics.finc, [1021](#)
- gsl_stats_sd
 - statistics.finc, [1021](#)
- gsl_stats_sd_m
 - statistics.finc, [1021](#)
- gsl_stats_sd_with_fixed_mean
 - statistics.finc, [1021](#)
- gsl_stats_skew
 - statistics.finc, [1021](#)
- gsl_stats_skew_m_sd
 - statistics.finc, [1022](#)
- gsl_stats_spearman
 - statistics.finc, [1022](#)
- gsl_stats_variance
 - statistics.finc, [1022](#)
- gsl_stats_variance_m
 - statistics.finc, [1022](#)
- gsl_stats_variance_with_fixed_mean
 - statistics.finc, [1022](#)
- gsl_stats_wabsdev
 - statistics.finc, [1023](#)
- gsl_stats_wabsdev_m
 - statistics.finc, [1023](#)
- gsl_stats_wkurtosis
 - statistics.finc, [1023](#)
- gsl_stats_wkurtosis_m_sd
 - statistics.finc, [1023](#)
- gsl_stats_wmean
 - statistics.finc, [1023](#)
- gsl_stats_wsd
 - statistics.finc, [1024](#)
- gsl_stats_wsd_m
 - statistics.finc, [1024](#)
- gsl_stats_wsd_with_fixed_mean
 - statistics.finc, [1024](#)
- gsl_stats_wskew
 - statistics.finc, [1024](#)
- gsl_stats_wskew_m_sd
 - statistics.finc, [1024](#)
- gsl_stats_wvariance
 - statistics.finc, [1025](#)
- gsl_stats_wvariance_m
 - statistics.finc, [1025](#)
- gsl_stats_wvariance_with_fixed_mean
 - statistics.finc, [1025](#)
- gsl_sterror
 - error.finc, [346](#)
- gsl_sum_levin_u_accel

- sum_levin.finc, [1027](#)
- gsl_sum_levin_u_alloc
 - sum_levin.finc, [1027](#)
- gsl_sum_levin_u_free
 - sum_levin.finc, [1028](#)
- gsl_sum_levin_u_workspace
 - fgsl::fgsl_sum_levin_u_workspace, [259](#)
- gsl_sum_levin_ustrunc_accel
 - sum_levin.finc, [1028](#)
- gsl_sum_levin_ustrunc_alloc
 - sum_levin.finc, [1028](#)
- gsl_sum_levin_ustrunc_free
 - sum_levin.finc, [1028](#)
- gsl_sum_levin_ustrunc_workspace
 - fgsl::fgsl_sum_levin_ustrunc_workspace, [259](#)
- gsl_vector
 - fgsl::fgsl_vector, [259](#)
- gsl_vector_complex
 - fgsl::fgsl_vector_complex, [261](#)
- gsl_vector_complex_get
 - array.finc, [298](#)
- gsl_vector_complex_ptr
 - array.finc, [298](#)
- gsl_vector_get
 - array.finc, [299](#)
- gsl_vector_int
 - fgsl::fgsl_vector_int, [263](#)
- gsl_vector_int_ptr
 - array.finc, [299](#)
- gsl_vector_ptr
 - array.finc, [299](#)
- gsl_wavelet
 - fgsl::fgsl_wavelet, [264](#)
- gsl_wavelet2d_nstransform
 - wavelet.finc, [1035](#)
- gsl_wavelet2d_nstransform_forward
 - wavelet.finc, [1035](#)
- gsl_wavelet2d_nstransform_inverse
 - wavelet.finc, [1035](#)
- gsl_wavelet2d_nstransform_matrix
 - wavelet.finc, [1036](#)
- gsl_wavelet2d_nstransform_matrix_forward
 - wavelet.finc, [1036](#)
- gsl_wavelet2d_nstransform_matrix_inverse
 - wavelet.finc, [1036](#)
- gsl_wavelet2d_transform
 - wavelet.finc, [1036](#)
- gsl_wavelet2d_transform_forward
 - wavelet.finc, [1036](#)
- gsl_wavelet2d_transform_inverse
 - wavelet.finc, [1037](#)
- gsl_wavelet2d_transform_matrix
 - wavelet.finc, [1037](#)
- gsl_wavelet2d_transform_matrix_forward
 - wavelet.finc, [1037](#)
- gsl_wavelet2d_transform_matrix_inverse
 - wavelet.finc, [1037](#)
- gsl_wavelet_alloc
 - wavelet.finc, [1037](#)
- gsl_wavelet_free
 - wavelet.finc, [1038](#)
- gsl_wavelet_name
 - wavelet.finc, [1038](#)
- gsl_wavelet_transform
 - wavelet.finc, [1038](#)
- gsl_wavelet_transform_forward
 - wavelet.finc, [1038](#)
- gsl_wavelet_transform_inverse
 - wavelet.finc, [1038](#)
- gsl_wavelet_workspace
 - fgsl::fgsl_wavelet_workspace, [265](#)
- gsl_wavelet_workspace_alloc
 - wavelet.finc, [1039](#)
- gsl_wavelet_workspace_free
 - wavelet.finc, [1039](#)
- histogram.finc
 - fgsl_histogram2d_accumulate, [369](#)
 - fgsl_histogram2d_add, [370](#)
 - fgsl_histogram2d_alloc, [370](#)
 - fgsl_histogram2d_clone, [370](#)
 - fgsl_histogram2d_cov, [370](#)
 - fgsl_histogram2d_div, [370](#)
 - fgsl_histogram2d_equal_bins_p, [370](#)
 - fgsl_histogram2d_find, [371](#)
 - fgsl_histogram2d_fprintf, [371](#)
 - fgsl_histogram2d_fread, [371](#)
 - fgsl_histogram2d_free, [371](#)
 - fgsl_histogram2d_fscanf, [371](#)
 - fgsl_histogram2d_fwrite, [371](#)
 - fgsl_histogram2d_get, [372](#)
 - fgsl_histogram2d_get_xrange, [372](#)
 - fgsl_histogram2d_get_yrange, [372](#)
 - fgsl_histogram2d_increment, [372](#)
 - fgsl_histogram2d_max_bin, [372](#)
 - fgsl_histogram2d_max_val, [373](#)
 - fgsl_histogram2d_memcpy, [373](#)
 - fgsl_histogram2d_min_bin, [373](#)
 - fgsl_histogram2d_min_val, [373](#)
 - fgsl_histogram2d_mul, [373](#)
 - fgsl_histogram2d_nx, [373](#)
 - fgsl_histogram2d_ny, [374](#)
 - fgsl_histogram2d_pdf_alloc, [374](#)
 - fgsl_histogram2d_pdf_free, [374](#)
 - fgsl_histogram2d_pdf_init, [374](#)
 - fgsl_histogram2d_pdf_sample, [374](#)
 - fgsl_histogram2d_reset, [374](#)
 - fgsl_histogram2d_scale, [375](#)
 - fgsl_histogram2d_set_ranges, [375](#)
 - fgsl_histogram2d_set_ranges_uniform, [375](#)
 - fgsl_histogram2d_shift, [375](#)
 - fgsl_histogram2d_sub, [375](#)
 - fgsl_histogram2d_sum, [375](#)
 - fgsl_histogram2d_xmax, [376](#)
 - fgsl_histogram2d_xmean, [376](#)
 - fgsl_histogram2d_xmin, [376](#)
 - fgsl_histogram2d_xsigma, [376](#)

fgsl_histogram2d_ymax, 376
fgsl_histogram2d_ymean, 376
fgsl_histogram2d_ymin, 376
fgsl_histogram2d_ysigma, 377
fgsl_histogram_accumulate, 377
fgsl_histogram_add, 377
fgsl_histogram_alloc, 377
fgsl_histogram_bins, 377
fgsl_histogram_clone, 377
fgsl_histogram_div, 378
fgsl_histogram_equal_bins_p, 378
fgsl_histogram_find, 378
fgsl_histogram_fprintf, 378
fgsl_histogram_fread, 378
fgsl_histogram_free, 378
fgsl_histogram_fscanf, 379
fgsl_histogram_fwrite, 379
fgsl_histogram_get, 379
fgsl_histogram_get_range, 379
fgsl_histogram_increment, 379
fgsl_histogram_max, 379
fgsl_histogram_max_bin, 380
fgsl_histogram_max_val, 380
fgsl_histogram_mean, 380
fgsl_histogram_memcpy, 380
fgsl_histogram_min, 380
fgsl_histogram_min_bin, 380
fgsl_histogram_min_val, 380
fgsl_histogram_mul, 381
fgsl_histogram_pdf_alloc, 381
fgsl_histogram_pdf_free, 381
fgsl_histogram_pdf_init, 381
fgsl_histogram_pdf_sample, 381
fgsl_histogram_reset, 381
fgsl_histogram_scale, 382
fgsl_histogram_set_ranges, 382
fgsl_histogram_set_ranges_uniform, 382
fgsl_histogram_shift, 382
fgsl_histogram_sigma, 382
fgsl_histogram_status, 382
fgsl_histogram_sub, 383
fgsl_histogram_sum, 383
gsl_histogram2d_accumulate, 385
gsl_histogram2d_add, 385
gsl_histogram2d_alloc, 385
gsl_histogram2d_clone, 385
gsl_histogram2d_cov, 386
gsl_histogram2d_div, 386
gsl_histogram2d_equal_bins_p, 386
gsl_histogram2d_find, 386
gsl_histogram2d_fprintf, 386
gsl_histogram2d_fread, 386
gsl_histogram2d_free, 387
gsl_histogram2d_fscanf, 387
gsl_histogram2d_fwrite, 387
gsl_histogram2d_get, 387
gsl_histogram2d_get_xrange, 387
gsl_histogram2d_get_yrange, 387
gsl_histogram2d_increment, 388
gsl_histogram2d_max_bin, 388
gsl_histogram2d_max_val, 388
gsl_histogram2d_memcpy, 388
gsl_histogram2d_min_bin, 388
gsl_histogram2d_min_val, 388
gsl_histogram2d_mul, 389
gsl_histogram2d_nx, 389
gsl_histogram2d_ny, 389
gsl_histogram2d_pdf_alloc, 389
gsl_histogram2d_pdf_free, 389
gsl_histogram2d_pdf_init, 389
gsl_histogram2d_pdf_sample, 390
gsl_histogram2d_reset, 390
gsl_histogram2d_scale, 390
gsl_histogram2d_set_ranges, 390
gsl_histogram2d_set_ranges_uniform, 390
gsl_histogram2d_shift, 391
gsl_histogram2d_sub, 391
gsl_histogram2d_sum, 391
gsl_histogram2d_xmax, 391
gsl_histogram2d_xmean, 391
gsl_histogram2d_xmin, 391
gsl_histogram2d_xsigma, 392
gsl_histogram2d_ymax, 392
gsl_histogram2d_ymean, 392
gsl_histogram2d_ymin, 392
gsl_histogram2d_ysigma, 392
gsl_histogram_accumulate, 392
gsl_histogram_add, 392
gsl_histogram_alloc, 393
gsl_histogram_bins, 393
gsl_histogram_clone, 393
gsl_histogram_div, 393
gsl_histogram_equal_bins_p, 393
gsl_histogram_find, 393
gsl_histogram_fprintf, 394
gsl_histogram_fread, 394
gsl_histogram_free, 394
gsl_histogram_fscanf, 394
gsl_histogram_fwrite, 394
gsl_histogram_get, 394
gsl_histogram_get_range, 395
gsl_histogram_increment, 395
gsl_histogram_max, 395
gsl_histogram_max_bin, 395
gsl_histogram_max_val, 395
gsl_histogram_mean, 395
gsl_histogram_memcpy, 396
gsl_histogram_min, 396
gsl_histogram_min_bin, 396
gsl_histogram_min_val, 396
gsl_histogram_mul, 396
gsl_histogram_pdf_alloc, 396
gsl_histogram_pdf_free, 396
gsl_histogram_pdf_init, 397
gsl_histogram_pdf_sample, 397
gsl_histogram_reset, 397

- gsl_histogram_scale, 397
- gsl_histogram_set_ranges, 397
- gsl_histogram_set_ranges_uniform, 397
- gsl_histogram_shift, 398
- gsl_histogram_sigma, 398
- gsl_histogram_sub, 398
- gsl_histogram_sum, 398
- ieee.finc
 - fgsl_ieee_env_setup, 399
 - fgsl_ieee_fprintf_double, 399
 - fgsl_ieee_fprintf_float, 399
 - fgsl_ieee_printf_double, 399
 - fgsl_ieee_printf_float, 399
 - gsl_ieee_env_setup, 400
 - gsl_ieee_fprintf_double, 400
 - gsl_ieee_fprintf_float, 400
 - gsl_ieee_printf_double, 400
 - gsl_ieee_printf_float, 401
- integration.finc
 - fgsl_integration_cquad, 402
 - fgsl_integration_cquad_workspace_alloc, 402
 - fgsl_integration_cquad_workspace_free, 402
 - fgsl_integration_cquad_workspace_status, 402
 - fgsl_integration_fixed, 402
 - fgsl_integration_fixed_alloc, 403
 - fgsl_integration_fixed_free, 403
 - fgsl_integration_fixed_n, 403
 - fgsl_integration_fixed_nodes, 403
 - fgsl_integration_fixed_weights, 403
 - fgsl_integration_glfixed, 403
 - fgsl_integration_glfixed_point, 404
 - fgsl_integration_glfixed_table_alloc, 404
 - fgsl_integration_glfixed_table_free, 404
 - fgsl_integration_glfixed_table_status, 404
 - fgsl_integration_qag, 404
 - fgsl_integration_qagi, 405
 - fgsl_integration_qagil, 405
 - fgsl_integration_qagiu, 405
 - fgsl_integration_qagp, 405
 - fgsl_integration_qags, 406
 - fgsl_integration_qawc, 406
 - fgsl_integration_qawf, 406
 - fgsl_integration_qawo, 406
 - fgsl_integration_qawo_table_alloc, 407
 - fgsl_integration_qawo_table_free, 407
 - fgsl_integration_qawo_table_set, 407
 - fgsl_integration_qawo_table_set_length, 407
 - fgsl_integration_qawo_table_status, 407
 - fgsl_integration_qaws, 408
 - fgsl_integration_qaws_table_alloc, 408
 - fgsl_integration_qaws_table_free, 408
 - fgsl_integration_qaws_table_set, 408
 - fgsl_integration_qaws_table_status, 408
 - fgsl_integration_qng, 409
 - fgsl_integration_romberg, 409
 - fgsl_integration_romberg_alloc, 409
 - fgsl_integration_romberg_free, 409
 - fgsl_integration_workspace_alloc, 409
 - fgsl_integration_workspace_free, 410
 - fgsl_integration_workspace_status, 410
 - fgsl_sizeof_integration_qawo_table, 410
 - fgsl_sizeof_integration_qaws_table, 410
 - fgsl_sizeof_integration_workspace, 410
 - gsl_aux_integration_fixed_alloc, 412
 - gsl_aux_sizeof_integration_qawo_table, 412
 - gsl_aux_sizeof_integration_qaws_table, 412
 - gsl_aux_sizeof_integration_workspace, 412
 - gsl_integration_cquad, 412
 - gsl_integration_cquad_workspace_alloc, 413
 - gsl_integration_cquad_workspace_free, 413
 - gsl_integration_fixed, 413
 - gsl_integration_fixed_free, 413
 - gsl_integration_fixed_n, 413
 - gsl_integration_fixed_nodes, 413
 - gsl_integration_fixed_weights, 414
 - gsl_integration_glfixed, 414
 - gsl_integration_glfixed_point, 414
 - gsl_integration_glfixed_table_alloc, 414
 - gsl_integration_glfixed_table_free, 414
 - gsl_integration_qag, 414
 - gsl_integration_qagi, 415
 - gsl_integration_qagil, 415
 - gsl_integration_qagiu, 415
 - gsl_integration_qagp, 415
 - gsl_integration_qags, 416
 - gsl_integration_qawc, 416
 - gsl_integration_qawf, 416
 - gsl_integration_qawo, 417
 - gsl_integration_qawo_table_alloc, 417
 - gsl_integration_qawo_table_free, 417
 - gsl_integration_qawo_table_set, 417
 - gsl_integration_qawo_table_set_length, 418
 - gsl_integration_qaws, 418
 - gsl_integration_qaws_table_alloc, 418
 - gsl_integration_qaws_table_free, 418
 - gsl_integration_qaws_table_set, 418
 - gsl_integration_qng, 419
 - gsl_integration_romberg, 419
 - gsl_integration_romberg_alloc, 419
 - gsl_integration_romberg_free, 419
 - gsl_integration_workspace_alloc, 419
 - gsl_integration_workspace_free, 420
- interface/array.finc, 292
- interface/bspline.finc, 302
- interface/chebyshev.finc, 307
- interface/complex.finc, 314
- interface/deriv.finc, 319
- interface/dht.finc, 322
- interface/eigen.finc, 333
- interface/error.finc, 345
- interface/fft.finc, 352
- interface/filter.finc, 361
- interface/fit.finc, 366
- interface/generics.finc, 1054
- interface/histogram.finc, 383
- interface/ieee.finc, 400

interface/integration.finc, 411
interface/interp.finc, 437
interface/io.finc, 457
interface/linalg.finc, 495
interface/math.finc, 538
interface/min.finc, 545
interface/misc.finc, 550
interface/montecarlo.finc, 557
interface/movstat.finc, 565
interface/multifit.finc, 591
interface/multilarge.finc, 615
interface/multimin.finc, 624
interface/multiroots.finc, 633
interface/nlfit.finc, 647
interface/ntuple.finc, 659
interface/ode.finc, 676
interface/permutation.finc, 701
interface/poly.finc, 718
interface/rng.finc, 761
interface/roots.finc, 804
interface/rstat.finc, 811
interface/siman.finc, 816
interface/sort.finc, 822
interface/specfunc.finc, 887
interface/splinalg.finc, 988
interface/spmatrix.finc, 997
interface/statistics.finc, 1014
interface/sum_levin.finc, 1027
interface/wavelet.finc, 1034
interp.finc
 fgsl_aux_interp2d_alloc, 439
 fgsl_aux_interp_alloc, 439
 fgsl_interp2d_alloc, 421
 fgsl_interp2d_eval, 422
 fgsl_interp2d_eval_deriv_x, 422
 fgsl_interp2d_eval_deriv_x_e, 422
 fgsl_interp2d_eval_deriv_xx, 422
 fgsl_interp2d_eval_deriv_xx_e, 423
 fgsl_interp2d_eval_deriv_xy, 423
 fgsl_interp2d_eval_deriv_xy_e, 423
 fgsl_interp2d_eval_deriv_y, 423
 fgsl_interp2d_eval_deriv_y_e, 424
 fgsl_interp2d_eval_deriv_yy, 424
 fgsl_interp2d_eval_deriv_yy_e, 424
 fgsl_interp2d_eval_e, 424
 fgsl_interp2d_eval_e_extrap, 425
 fgsl_interp2d_eval_extrap, 425
 fgsl_interp2d_eval_extrap_e, 425
 fgsl_interp2d_free, 425
 fgsl_interp2d_init, 426
 fgsl_interp2d_min_size, 426
 fgsl_interp2d_name, 426
 fgsl_interp2d_status, 426
 fgsl_interp2d_type_min_size, 426
 fgsl_interp_accel_alloc, 426
 fgsl_interp_accel_find, 427
 fgsl_interp_accel_free, 427
 fgsl_interp_accel_status, 427
 fgsl_interp_alloc, 427
 fgsl_interp_bsearch, 427
 fgsl_interp_eval, 427
 fgsl_interp_eval_deriv, 428
 fgsl_interp_eval_deriv2, 428
 fgsl_interp_eval_deriv2_e, 428
 fgsl_interp_eval_deriv_e, 428
 fgsl_interp_eval_e, 428
 fgsl_interp_eval_integ, 429
 fgsl_interp_eval_integ_e, 429
 fgsl_interp_free, 429
 fgsl_interp_init, 429
 fgsl_interp_min_size, 429
 fgsl_interp_name, 430
 fgsl_interp_status, 430
 fgsl_interp_type_min_size, 430
 fgsl_sizeof_interp, 430
 fgsl_spline2d_alloc, 430
 fgsl_spline2d_eval, 430
 fgsl_spline2d_eval_deriv_x, 431
 fgsl_spline2d_eval_deriv_x_e, 431
 fgsl_spline2d_eval_deriv_xx, 431
 fgsl_spline2d_eval_deriv_xx_e, 431
 fgsl_spline2d_eval_deriv_xy, 431
 fgsl_spline2d_eval_deriv_xy_e, 432
 fgsl_spline2d_eval_deriv_y, 432
 fgsl_spline2d_eval_deriv_y_e, 432
 fgsl_spline2d_eval_deriv_yy, 432
 fgsl_spline2d_eval_deriv_yy_e, 432
 fgsl_spline2d_eval_e, 433
 fgsl_spline2d_eval_extrap, 433
 fgsl_spline2d_eval_extrap_e, 433
 fgsl_spline2d_free, 433
 fgsl_spline2d_get, 433
 fgsl_spline2d_init, 434
 fgsl_spline2d_min_size, 434
 fgsl_spline2d_name, 434
 fgsl_spline2d_set, 434
 fgsl_spline2d_status, 434
 fgsl_spline_alloc, 434
 fgsl_spline_eval, 435
 fgsl_spline_eval_deriv, 435
 fgsl_spline_eval_deriv2, 435
 fgsl_spline_eval_deriv2_e, 435
 fgsl_spline_eval_deriv_e, 435
 fgsl_spline_eval_e, 436
 fgsl_spline_eval_integ, 436
 fgsl_spline_eval_integ_e, 436
 fgsl_spline_free, 436
 fgsl_spline_init, 436
 fgsl_spline_min_size, 437
 fgsl_spline_name, 437
 fgsl_spline_status, 437
 gsl_aux_sizeof_interp, 439
 gsl_interp2d_alloc, 439
 gsl_interp2d_eval, 440
 gsl_interp2d_eval_deriv_x, 440
 gsl_interp2d_eval_deriv_x_e, 440

fgsl_linalg_complex_cholesky_decomp, 468
fgsl_linalg_complex_cholesky_invert, 468
fgsl_linalg_complex_cholesky_solve, 468
fgsl_linalg_complex_cholesky_svx, 468
fgsl_linalg_complex_householder_hm, 469
fgsl_linalg_complex_householder_hv, 469
fgsl_linalg_complex_householder_mh, 469
fgsl_linalg_complex_householder_transform, 469
fgsl_linalg_complex_lu_decomp, 469
fgsl_linalg_complex_lu_det, 469
fgsl_linalg_complex_lu_invert, 470
fgsl_linalg_complex_lu_invx, 470
fgsl_linalg_complex_lu_ldet, 470
fgsl_linalg_complex_lu_refine, 470
fgsl_linalg_complex_lu_sgndet, 470
fgsl_linalg_complex_lu_solve, 470
fgsl_linalg_complex_lu_svx, 471
fgsl_linalg_complex_qr_decomp, 471
fgsl_linalg_complex_qr_decomp_r, 471
fgsl_linalg_complex_qr_issolve, 471
fgsl_linalg_complex_qr_issolve_r, 471
fgsl_linalg_complex_qr_qhvec, 472
fgsl_linalg_complex_qr_qhvec_r, 472
fgsl_linalg_complex_qr_qvec, 472
fgsl_linalg_complex_qr_solve, 472
fgsl_linalg_complex_qr_solve_r, 472
fgsl_linalg_complex_qr_svx, 473
fgsl_linalg_complex_qr_unpack_r, 473
fgsl_linalg_complex_tri_invert, 473
fgsl_linalg_complex_tri_lhl, 473
fgsl_linalg_complex_tri_ul, 473
fgsl_linalg_givens, 473
fgsl_linalg_givens_gv, 474
fgsl_linalg_hermtdecomp, 474
fgsl_linalg_hermtdecomp_unpack, 474
fgsl_linalg_hermtdecomp_unpack_t, 474
fgsl_linalg_hessenberg_decomp, 474
fgsl_linalg_hessenberg_set_zero, 475
fgsl_linalg_hessenberg_unpack, 475
fgsl_linalg_hessenberg_unpack_accum, 475
fgsl_linalg_hesstri_decomp, 475
fgsl_linalg_hh_solve, 475
fgsl_linalg_hh_svx, 475
fgsl_linalg_householder_hm, 476
fgsl_linalg_householder_hv, 476
fgsl_linalg_householder_mh, 476
fgsl_linalg_householder_transform, 476
fgsl_linalg_ldlt_band_decomp, 476
fgsl_linalg_ldlt_band_rcond, 476
fgsl_linalg_ldlt_band_solve, 477
fgsl_linalg_ldlt_band_svx, 477
fgsl_linalg_ldlt_band_unpack, 477
fgsl_linalg_ldlt_decomp, 477
fgsl_linalg_ldlt_rcond, 477
fgsl_linalg_ldlt_solve, 477
fgsl_linalg_ldlt_svx, 478
fgsl_linalg_lq_decomp, 478
fgsl_linalg_lq_issolve, 478
fgsl_linalg_lq_qtvec, 478
fgsl_linalg_lq_unpack, 478
fgsl_linalg_lu_decomp, 479
fgsl_linalg_lu_det, 479
fgsl_linalg_lu_invert, 479
fgsl_linalg_lu_invx, 479
fgsl_linalg_lu_ldet, 479
fgsl_linalg_lu_refine, 479
fgsl_linalg_lu_sgndet, 480
fgsl_linalg_lu_solve, 480
fgsl_linalg_lu_svx, 480
fgsl_linalg_mcholesky_decomp, 480
fgsl_linalg_mcholesky_invert, 480
fgsl_linalg_mcholesky_rcond, 481
fgsl_linalg_mcholesky_solve, 481
fgsl_linalg_mcholesky_svx, 481
fgsl_linalg_pcholesky_decomp, 481
fgsl_linalg_pcholesky_decomp2, 481
fgsl_linalg_pcholesky_invert, 482
fgsl_linalg_pcholesky_rcond, 482
fgsl_linalg_pcholesky_solve, 482
fgsl_linalg_pcholesky_solve2, 482
fgsl_linalg_pcholesky_svx, 482
fgsl_linalg_pcholesky_svx2, 483
fgsl_linalg_ql_decomp, 483
fgsl_linalg_ql_unpack, 483
fgsl_linalg_qr_decomp, 483
fgsl_linalg_qr_decomp_r, 483
fgsl_linalg_qr_issolve, 483
fgsl_linalg_qr_issolve_r, 484
fgsl_linalg_qr_matq, 484
fgsl_linalg_qr_qrsolve, 484
fgsl_linalg_qr_qtmat, 484
fgsl_linalg_qr_qtmat_r, 484
fgsl_linalg_qr_qtvec, 485
fgsl_linalg_qr_qtvec_r, 485
fgsl_linalg_qr_qvec, 485
fgsl_linalg_qr_resolve, 485
fgsl_linalg_qr_rsvx, 485
fgsl_linalg_qr_solve, 486
fgsl_linalg_qr_solve_r, 486
fgsl_linalg_qr_svx, 486
fgsl_linalg_qr_ud_decomp, 486
fgsl_linalg_qr_ud_issolve, 486
fgsl_linalg_qr_unpack, 487
fgsl_linalg_qr_unpack_r, 487
fgsl_linalg_qr_update, 487
fgsl_linalg_qr_ur_decomp, 487
fgsl_linalg_qr_uu_decomp, 487
fgsl_linalg_qr_uu_issolve, 488
fgsl_linalg_qr_uu_qtvec, 488
fgsl_linalg_qr_uu_decomp, 488
fgsl_linalg_qrpt_decomp, 488
fgsl_linalg_qrpt_decomp2, 488
fgsl_linalg_qrpt_issolve, 489
fgsl_linalg_qrpt_issolve2, 489
fgsl_linalg_qrpt_qrsolve, 489
fgsl_linalg_qrpt_rank, 489

- fgsl_linalg_qrpt_rcond, 490
- fgsl_linalg_qrpt_solve, 490
- fgsl_linalg_qrpt_rsvx, 490
- fgsl_linalg_qrpt_solve, 490
- fgsl_linalg_qrpt_svx, 490
- fgsl_linalg_qrpt_update, 491
- fgsl_linalg_r_solve, 491
- fgsl_linalg_r_svx, 491
- fgsl_linalg_solve_cyc_tridiag, 491
- fgsl_linalg_solve_symm_cyc_tridiag, 491
- fgsl_linalg_solve_symm_tridiag, 492
- fgsl_linalg_solve_tridiag, 492
- fgsl_linalg_sv_decomp, 492
- fgsl_linalg_sv_decomp_jacobi, 492
- fgsl_linalg_sv_decomp_mod, 492
- fgsl_linalg_sv_leverage, 493
- fgsl_linalg_sv_solve, 493
- fgsl_linalg_symmtd_decomp, 493
- fgsl_linalg_symmtd_unpack, 493
- fgsl_linalg_symmtd_unpack_t, 493
- fgsl_linalg_tri_invert, 494
- fgsl_linalg_tri_lower_invert, 494
- fgsl_linalg_tri_lower_rcond, 494
- fgsl_linalg_tri_lower_unit_invert, 494
- fgsl_linalg_tri_ltl, 494
- fgsl_linalg_tri_rcond, 494
- fgsl_linalg_tri_ul, 495
- fgsl_linalg_tri_upper_invert, 495
- fgsl_linalg_tri_upper_rcond, 495
- fgsl_linalg_tri_upper_unit_invert, 495
- gsl_linalg_balance_matrix, 499
- gsl_linalg_bidiag_decomp, 499
- gsl_linalg_bidiag_unpack, 499
- gsl_linalg_bidiag_unpack2, 499
- gsl_linalg_bidiag_unpack_b, 500
- gsl_linalg_cholesky_band_decomp, 500
- gsl_linalg_cholesky_band_invert, 500
- gsl_linalg_cholesky_band_rcond, 500
- gsl_linalg_cholesky_band_scale, 500
- gsl_linalg_cholesky_band_scale_apply, 500
- gsl_linalg_cholesky_band_solve, 501
- gsl_linalg_cholesky_band_solve, 501
- gsl_linalg_cholesky_band_svx, 501
- gsl_linalg_cholesky_band_svxm, 501
- gsl_linalg_cholesky_band_unpack, 501
- gsl_linalg_cholesky_decomp, 501
- gsl_linalg_cholesky_decomp1, 502
- gsl_linalg_cholesky_decomp2, 502
- gsl_linalg_cholesky_invert, 502
- gsl_linalg_cholesky_rcond, 502
- gsl_linalg_cholesky_scale, 502
- gsl_linalg_cholesky_scale_apply, 502
- gsl_linalg_cholesky_solve, 503
- gsl_linalg_cholesky_solve2, 503
- gsl_linalg_cholesky_svx, 503
- gsl_linalg_cholesky_svx2, 503
- gsl_linalg_cod_decomp, 503
- gsl_linalg_cod_decomp_e, 504
- gsl_linalg_cod_issolve, 504
- gsl_linalg_cod_issolve2, 504
- gsl_linalg_cod_matz, 504
- gsl_linalg_cod_unpack, 505
- gsl_linalg_complex_cholesky_decomp, 505
- gsl_linalg_complex_cholesky_invert, 505
- gsl_linalg_complex_cholesky_solve, 505
- gsl_linalg_complex_cholesky_svx, 505
- gsl_linalg_complex_householder_hm, 506
- gsl_linalg_complex_householder_hv, 506
- gsl_linalg_complex_householder_mh, 506
- gsl_linalg_complex_householder_transform, 506
- gsl_linalg_complex_lu_decomp, 506
- gsl_linalg_complex_lu_det, 506
- gsl_linalg_complex_lu_invert, 507
- gsl_linalg_complex_lu_invx, 507
- gsl_linalg_complex_lu_ldet, 507
- gsl_linalg_complex_lu_refine, 507
- gsl_linalg_complex_lu_sgndet, 507
- gsl_linalg_complex_lu_solve, 507
- gsl_linalg_complex_lu_svx, 508
- gsl_linalg_complex_qr_decomp, 508
- gsl_linalg_complex_qr_decomp_r, 508
- gsl_linalg_complex_qr_issolve, 508
- gsl_linalg_complex_qr_issolve_r, 508
- gsl_linalg_complex_qr_qhvec, 509
- gsl_linalg_complex_qr_qhvec_r, 509
- gsl_linalg_complex_qr_qvec, 509
- gsl_linalg_complex_qr_solve, 509
- gsl_linalg_complex_qr_solve_r, 509
- gsl_linalg_complex_qr_svx, 510
- gsl_linalg_complex_qr_unpack_r, 510
- gsl_linalg_complex_tri_invert, 510
- gsl_linalg_complex_tri_lhl, 510
- gsl_linalg_complex_tri_ul, 510
- gsl_linalg_givens, 510
- gsl_linalg_givens_gv, 511
- gsl_linalg_hermttd_decomp, 511
- gsl_linalg_hermttd_unpack, 511
- gsl_linalg_hermttd_unpack_t, 511
- gsl_linalg_hessenberg_decomp, 511
- gsl_linalg_hessenberg_set_zero, 512
- gsl_linalg_hessenberg_unpack, 512
- gsl_linalg_hessenberg_unpack_accum, 512
- gsl_linalg_hesstri_decomp, 512
- gsl_linalg_hh_solve, 512
- gsl_linalg_hh_svx, 512
- gsl_linalg_householder_hm, 513
- gsl_linalg_householder_hv, 513
- gsl_linalg_householder_mh, 513
- gsl_linalg_householder_transform, 513
- gsl_linalg_ldlt_band_decomp, 513
- gsl_linalg_ldlt_band_rcond, 513
- gsl_linalg_ldlt_band_solve, 514
- gsl_linalg_ldlt_band_svx, 514
- gsl_linalg_ldlt_band_unpack, 514
- gsl_linalg_ldlt_decomp, 514
- gsl_linalg_ldlt_rcond, 514

- gsl_linalg_ldlt_solve, 514
- gsl_linalg_ldlt_svx, 515
- gsl_linalg_lq_decomp, 515
- gsl_linalg_lq_issolve, 515
- gsl_linalg_lq_qtvec, 515
- gsl_linalg_lq_unpack, 515
- gsl_linalg_lu_decomp, 516
- gsl_linalg_lu_det, 516
- gsl_linalg_lu_invert, 516
- gsl_linalg_lu_invx, 516
- gsl_linalg_lu_lndet, 516
- gsl_linalg_lu_refine, 516
- gsl_linalg_lu_sgndet, 517
- gsl_linalg_lu_solve, 517
- gsl_linalg_lu_svx, 517
- gsl_linalg_mcholesky_decomp, 517
- gsl_linalg_mcholesky_invert, 517
- gsl_linalg_mcholesky_rcond, 518
- gsl_linalg_mcholesky_solve, 518
- gsl_linalg_mcholesky_svx, 518
- gsl_linalg_pcholesky_decomp, 518
- gsl_linalg_pcholesky_decomp2, 518
- gsl_linalg_pcholesky_invert, 519
- gsl_linalg_pcholesky_rcond, 519
- gsl_linalg_pcholesky_solve, 519
- gsl_linalg_pcholesky_solve2, 519
- gsl_linalg_pcholesky_svx, 519
- gsl_linalg_pcholesky_svx2, 520
- gsl_linalg_ql_decomp, 520
- gsl_linalg_ql_unpack, 520
- gsl_linalg_qr_decomp, 520
- gsl_linalg_qr_decomp_r, 520
- gsl_linalg_qr_issolve, 520
- gsl_linalg_qr_issolve_r, 521
- gsl_linalg_qr_matq, 521
- gsl_linalg_qr_qrsolve, 521
- gsl_linalg_qr_qtmat, 521
- gsl_linalg_qr_qtmat_r, 521
- gsl_linalg_qr_qtvec, 522
- gsl_linalg_qr_qtvec_r, 522
- gsl_linalg_qr_qvec, 522
- gsl_linalg_qr_solve, 522
- gsl_linalg_qr_rsvx, 522
- gsl_linalg_qr_solve, 523
- gsl_linalg_qr_solve_r, 523
- gsl_linalg_qr_svx, 523
- gsl_linalg_qr_ud_decomp, 523
- gsl_linalg_qr_ud_issolve, 523
- gsl_linalg_qr_unpack, 524
- gsl_linalg_qr_unpack_r, 524
- gsl_linalg_qr_update, 524
- gsl_linalg_qr_ur_decomp, 524
- gsl_linalg_qr_uu_decomp, 524
- gsl_linalg_qr_uu_issolve, 525
- gsl_linalg_qr_uu_qtvec, 525
- gsl_linalg_qr_uz_decomp, 525
- gsl_linalg_qrpt_decomp, 525
- gsl_linalg_qrpt_decomp2, 525
- gsl_linalg_qrpt_issolve, 526
- gsl_linalg_qrpt_issolve2, 526
- gsl_linalg_qrpt_qrsolve, 526
- gsl_linalg_qrpt_rank, 526
- gsl_linalg_qrpt_rcond, 527
- gsl_linalg_qrpt_solve, 527
- gsl_linalg_qrpt_rsvx, 527
- gsl_linalg_qrpt_solve, 527
- gsl_linalg_qrpt_svx, 527
- gsl_linalg_qrpt_update, 528
- gsl_linalg_r_solve, 528
- gsl_linalg_r_svx, 528
- gsl_linalg_solve_cyc_tridiag, 528
- gsl_linalg_solve_symm_cyc_tridiag, 528
- gsl_linalg_solve_symm_tridiag, 529
- gsl_linalg_solve_tridiag, 529
- gsl_linalg_sv_decomp, 529
- gsl_linalg_sv_decomp_jacobi, 529
- gsl_linalg_sv_decomp_mod, 529
- gsl_linalg_sv_leverage, 530
- gsl_linalg_sv_solve, 530
- gsl_linalg_symmtd_decomp, 530
- gsl_linalg_symmtd_unpack, 530
- gsl_linalg_symmtd_unpack_t, 530
- gsl_linalg_tri_invert, 531
- gsl_linalg_tri_lower_invert, 531
- gsl_linalg_tri_lower_rcond, 531
- gsl_linalg_tri_lower_unit_invert, 531
- gsl_linalg_tri_ltl, 531
- gsl_linalg_tri_rcond, 531
- gsl_linalg_tri_ul, 532
- gsl_linalg_tri_upper_invert, 532
- gsl_linalg_tri_upper_rcond, 532
- gsl_linalg_tri_upper_unit_invert, 532
- m_1_pi
 - fgsl, 176
- m_2_pi
 - fgsl, 176
- m_2_sqrtpi
 - fgsl, 177
- m_e
 - fgsl, 177
- m_euler
 - fgsl, 177
- m_ln10
 - fgsl, 177
- m_ln2
 - fgsl, 177
- m_lnp_i
 - fgsl, 177
- m_log10e
 - fgsl, 177
- m_log2e
 - fgsl, 178
- m_pi
 - fgsl, 178
- m_pi_2
 - fgsl, 178

- m_pi_4
 - fgsl, [178](#)
- m_sqrt1_2
 - fgsl, [178](#)
- m_sqrt2
 - fgsl, [178](#)
- m_sqrt3
 - fgsl, [178](#)
- m_sqrtpi
 - fgsl, [179](#)
- math.finc
 - fgsl_acosh, [533](#)
 - fgsl_asinh, [533](#)
 - fgsl_atanh, [533](#)
 - fgsl_expm1, [534](#)
 - fgsl_fcmp, [534](#)
 - fgsl_finite, [534](#)
 - fgsl_fn_eval, [534](#)
 - fgsl_fn_eval_aux, [538](#)
 - fgsl_fn_fdf_eval_df, [534](#)
 - fgsl_fn_fdf_eval_df_aux, [539](#)
 - fgsl_fn_fdf_eval_f, [535](#)
 - fgsl_fn_fdf_eval_f_aux, [539](#)
 - fgsl_fn_fdf_eval_f_df, [535](#)
 - fgsl_fn_fdf_eval_f_df_aux, [539](#)
 - fgsl_frexp, [536](#)
 - fgsl_function_cfree, [539](#)
 - fgsl_function_cinit, [539](#)
 - fgsl_function_fdf_cfree, [539](#)
 - fgsl_function_fdf_cinit, [540](#)
 - fgsl_function_fdf_free, [536](#)
 - fgsl_function_fdf_init, [536](#)
 - fgsl_function_free, [536](#)
 - fgsl_function_init, [537](#)
 - fgsl_hypot, [540](#)
 - fgsl_hypot3, [540](#)
 - fgsl_isinf, [537](#)
 - fgsl_isnan, [537](#)
 - fgsl_ldexp, [537](#)
 - fgsl_log1p, [537](#)
 - gsl_acosh, [540](#)
 - gsl_asinh, [540](#)
 - gsl_atanh, [540](#)
 - gsl_expm1, [541](#)
 - gsl_fcmp, [541](#)
 - gsl_finite, [541](#)
 - gsl_frexp, [541](#)
 - gsl_isinf, [541](#)
 - gsl_isnan, [541](#)
 - gsl_ldexp, [542](#)
 - gsl_log1p, [542](#)
- min.finc
 - fgsl_aux_fminimizer_alloc, [545](#)
 - fgsl_min_fminimizer_alloc, [542](#)
 - fgsl_min_fminimizer_f_lower, [543](#)
 - fgsl_min_fminimizer_f_minimum, [543](#)
 - fgsl_min_fminimizer_f_upper, [543](#)
 - fgsl_min_fminimizer_free, [543](#)
 - fgsl_min_fminimizer_iterate, [543](#)
 - fgsl_min_fminimizer_name, [543](#)
 - fgsl_min_fminimizer_set, [543](#)
 - fgsl_min_fminimizer_set_with_values, [544](#)
 - fgsl_min_fminimizer_status, [544](#)
 - fgsl_min_fminimizer_x_lower, [544](#)
 - fgsl_min_fminimizer_x_minimum, [544](#)
 - fgsl_min_fminimizer_x_upper, [544](#)
 - fgsl_min_test_interval, [544](#)
 - gsl_min_fminimizer_alloc, [546](#)
 - gsl_min_fminimizer_f_lower, [546](#)
 - gsl_min_fminimizer_f_minimum, [546](#)
 - gsl_min_fminimizer_f_upper, [546](#)
 - gsl_min_fminimizer_free, [546](#)
 - gsl_min_fminimizer_iterate, [546](#)
 - gsl_min_fminimizer_name, [546](#)
 - gsl_min_fminimizer_set, [547](#)
 - gsl_min_fminimizer_set_with_values, [547](#)
 - gsl_min_fminimizer_x_lower, [547](#)
 - gsl_min_fminimizer_x_minimum, [547](#)
 - gsl_min_fminimizer_x_upper, [547](#)
 - gsl_min_test_interval, [547](#)
- misc.finc
 - fgsl_name, [548](#)
 - fgsl_sizeof_char, [549](#)
 - fgsl_sizeof_double, [549](#)
 - fgsl_sizeof_float, [549](#)
 - fgsl_sizeof_int, [549](#)
 - fgsl_sizeof_long, [549](#)
 - fgsl_sizeof_size_t, [549](#)
 - gsl_aux_sizeof_char, [550](#)
 - gsl_aux_sizeof_double, [550](#)
 - gsl_aux_sizeof_float, [550](#)
 - gsl_aux_sizeof_int, [551](#)
 - gsl_aux_sizeof_long, [551](#)
 - gsl_aux_sizeof_size_t, [551](#)
- montecarlo.finc
 - fgsl_monte_function_cfree, [557](#)
 - fgsl_monte_function_cinit, [558](#)
 - fgsl_monte_function_free, [552](#)
 - fgsl_monte_function_init, [552](#)
 - fgsl_monte_function_status, [552](#)
 - fgsl_monte_miser_alloc, [552](#)
 - fgsl_monte_miser_cgetparams, [558](#)
 - fgsl_monte_miser_csetparams, [558](#)
 - fgsl_monte_miser_free, [552](#)
 - fgsl_monte_miser_getparams, [552](#)
 - fgsl_monte_miser_init, [553](#)
 - fgsl_monte_miser_integrate, [553](#)
 - fgsl_monte_miser_setparams, [553](#)
 - fgsl_monte_miser_status, [553](#)
 - fgsl_monte_plain_alloc, [554](#)
 - fgsl_monte_plain_free, [554](#)
 - fgsl_monte_plain_init, [554](#)
 - fgsl_monte_plain_integrate, [554](#)
 - fgsl_monte_plain_status, [554](#)
 - fgsl_monte_vegas_alloc, [554](#)
 - fgsl_monte_vegas_cgetparams, [558](#)

- fgsl_monte_vegas_chisq, [555](#)
- fgsl_monte_vegas_csetparams, [558](#)
- fgsl_monte_vegas_free, [555](#)
- fgsl_monte_vegas_getparams, [555](#)
- fgsl_monte_vegas_init, [555](#)
- fgsl_monte_vegas_integrate, [555](#)
- fgsl_monte_vegas_runval, [556](#)
- fgsl_monte_vegas_setparams, [556](#)
- fgsl_monte_vegas_status, [556](#)
- gsl_monte_miser_alloc, [559](#)
- gsl_monte_miser_free, [559](#)
- gsl_monte_miser_init, [559](#)
- gsl_monte_miser_integrate, [559](#)
- gsl_monte_plain_alloc, [559](#)
- gsl_monte_plain_free, [560](#)
- gsl_monte_plain_init, [560](#)
- gsl_monte_plain_integrate, [560](#)
- gsl_monte_vegas_alloc, [560](#)
- gsl_monte_vegas_chisq, [560](#)
- gsl_monte_vegas_free, [560](#)
- gsl_monte_vegas_init, [561](#)
- gsl_monte_vegas_integrate, [561](#)
- gsl_monte_vegas_runval, [561](#)
- movstat.finc
 - fgsl_movstat_alloc, [562](#)
 - fgsl_movstat_alloc2, [562](#)
 - fgsl_movstat_apply, [562](#)
 - fgsl_movstat_fill, [562](#)
 - fgsl_movstat_free, [562](#)
 - fgsl_movstat_mad, [562](#)
 - fgsl_movstat_mad0, [563](#)
 - fgsl_movstat_max, [563](#)
 - fgsl_movstat_mean, [563](#)
 - fgsl_movstat_median, [563](#)
 - fgsl_movstat_min, [563](#)
 - fgsl_movstat_minmax, [564](#)
 - fgsl_movstat_qn, [564](#)
 - fgsl_movstat_qqr, [564](#)
 - fgsl_movstat_sd, [564](#)
 - fgsl_movstat_sn, [564](#)
 - fgsl_movstat_sum, [565](#)
 - fgsl_movstat_variance, [565](#)
 - gsl_movstat_alloc, [566](#)
 - gsl_movstat_alloc2, [566](#)
 - gsl_movstat_apply, [566](#)
 - gsl_movstat_fill, [566](#)
 - gsl_movstat_free, [567](#)
 - gsl_movstat_mad, [567](#)
 - gsl_movstat_mad0, [567](#)
 - gsl_movstat_max, [567](#)
 - gsl_movstat_mean, [567](#)
 - gsl_movstat_median, [568](#)
 - gsl_movstat_min, [568](#)
 - gsl_movstat_minmax, [568](#)
 - gsl_movstat_qn, [568](#)
 - gsl_movstat_qqr, [568](#)
 - gsl_movstat_sd, [569](#)
 - gsl_movstat_sn, [569](#)
 - gsl_movstat_sum, [569](#)
 - gsl_movstat_variance, [569](#)
- multifit.finc
 - fgsl_aux_multifit_fdfsolver_alloc, [593](#)
 - fgsl_aux_multifit_fsolver_alloc, [593](#)
 - fgsl_aux_multifit_robust_alloc, [593](#)
 - fgsl_multifit_covar, [571](#)
 - fgsl_multifit_covar_qrpt, [572](#)
 - fgsl_multifit_eval_wdf_nowts, [572](#)
 - fgsl_multifit_eval_wdf_wts, [572](#)
 - fgsl_multifit_eval_wf_nowts, [572](#)
 - fgsl_multifit_eval_wf_wts, [572](#)
 - fgsl_multifit_fdfridge_alloc, [573](#)
 - fgsl_multifit_fdfridge_driver, [573](#)
 - fgsl_multifit_fdfridge_free, [573](#)
 - fgsl_multifit_fdfridge_iterate, [573](#)
 - fgsl_multifit_fdfridge_name, [573](#)
 - fgsl_multifit_fdfridge_niter, [573](#)
 - fgsl_multifit_fdfridge_position, [574](#)
 - fgsl_multifit_fdfridge_residual, [574](#)
 - fgsl_multifit_fdfridge_set, [574](#)
 - fgsl_multifit_fdfridge_set2, [574](#)
 - fgsl_multifit_fdfridge_set3, [574](#)
 - fgsl_multifit_fdfridge_wset, [574](#)
 - fgsl_multifit_fdfridge_wset2, [575](#)
 - fgsl_multifit_fdfridge_wset3, [575](#)
 - fgsl_multifit_fdfsolver_alloc, [575](#)
 - fgsl_multifit_fdfsolver_dif_df_nowts, [575](#)
 - fgsl_multifit_fdfsolver_dif_df_wts, [575](#)
 - fgsl_multifit_fdfsolver_driver, [576](#)
 - fgsl_multifit_fdfsolver_dx, [576](#)
 - fgsl_multifit_fdfsolver_f, [576](#)
 - fgsl_multifit_fdfsolver_free, [576](#)
 - fgsl_multifit_fdfsolver_iterate, [576](#)
 - fgsl_multifit_fdfsolver_jac, [576](#)
 - fgsl_multifit_fdfsolver_name, [577](#)
 - fgsl_multifit_fdfsolver_niter, [577](#)
 - fgsl_multifit_fdfsolver_position, [577](#)
 - fgsl_multifit_fdfsolver_residual, [577](#)
 - fgsl_multifit_fdfsolver_set, [577](#)
 - fgsl_multifit_fdfsolver_status, [577](#)
 - fgsl_multifit_fdfsolver_test, [578](#)
 - fgsl_multifit_fdfsolver_wset, [578](#)
 - fgsl_multifit_fsolver_alloc, [578](#)
 - fgsl_multifit_fsolver_driver, [578](#)
 - fgsl_multifit_fsolver_free, [578](#)
 - fgsl_multifit_fsolver_iterate, [579](#)
 - fgsl_multifit_fsolver_name, [579](#)
 - fgsl_multifit_fsolver_position, [579](#)
 - fgsl_multifit_fsolver_set, [579](#)
 - fgsl_multifit_fsolver_status, [579](#)
 - fgsl_multifit_function_cfree, [593](#)
 - fgsl_multifit_function_cinit, [593](#)
 - fgsl_multifit_function_fdf_cfree, [593](#)
 - fgsl_multifit_function_fdf_cinit, [594](#)
 - fgsl_multifit_function_fdf_free, [579](#)
 - fgsl_multifit_function_fdf_init, [579](#)
 - fgsl_multifit_function_free, [580](#)

fgsl_multifit_function_init, 580
 fgsl_multifit_gradient, 580
 fgsl_multifit_linear, 580
 fgsl_multifit_linear_alloc, 580
 fgsl_multifit_linear_applyw, 581
 fgsl_multifit_linear_bsvd, 581
 fgsl_multifit_linear_est, 581
 fgsl_multifit_linear_free, 581
 fgsl_multifit_linear_gcv, 581
 fgsl_multifit_linear_gcv_calc, 582
 fgsl_multifit_linear_gcv_curve, 582
 fgsl_multifit_linear_gcv_init, 582
 fgsl_multifit_linear_gcv_min, 582
 fgsl_multifit_linear_genform1, 582
 fgsl_multifit_linear_genform2, 583
 fgsl_multifit_linear_l_decomp, 583
 fgsl_multifit_linear_lcorner, 583
 fgsl_multifit_linear_lcorner2, 583
 fgsl_multifit_linear_lcurvature, 583
 fgsl_multifit_linear_lcurve, 584
 fgsl_multifit_linear_lk, 584
 fgsl_multifit_linear_lreg, 584
 fgsl_multifit_linear_isobolev, 584
 fgsl_multifit_linear_rank, 584
 fgsl_multifit_linear_rcond, 585
 fgsl_multifit_linear_residuals, 585
 fgsl_multifit_linear_solve, 585
 fgsl_multifit_linear_stdform1, 585
 fgsl_multifit_linear_stdform2, 585
 fgsl_multifit_linear_svd, 586
 fgsl_multifit_linear_tsvd, 586
 fgsl_multifit_linear_wgenform2, 586
 fgsl_multifit_linear_wstdform1, 586
 fgsl_multifit_linear_wstdform2, 587
 fgsl_multifit_robust, 587
 fgsl_multifit_robust_alloc, 587
 fgsl_multifit_robust_est, 587
 fgsl_multifit_robust_free, 588
 fgsl_multifit_robust_maxiter, 588
 fgsl_multifit_robust_name, 588
 fgsl_multifit_robust_residuals, 588
 fgsl_multifit_robust_statistics, 588
 fgsl_multifit_robust_tune, 588
 fgsl_multifit_robust_weights, 589
 fgsl_multifit_status, 589
 fgsl_multifit_test_delta, 589
 fgsl_multifit_test_gradient, 589
 fgsl_multifit_wlinear, 589
 fgsl_multifit_wlinear_svd, 589
 fgsl_multifit_wlinear_tsvd, 590
 fgsl_multifit_wlinear_usvd, 590
 gsl_multifit_covar, 594
 gsl_multifit_covar_qrpt, 594
 gsl_multifit_eval_wdf, 594
 gsl_multifit_eval_wf, 594
 gsl_multifit_fdfridge_alloc, 595
 gsl_multifit_fdfridge_driver, 595
 gsl_multifit_fdfridge_free, 595
 gsl_multifit_fdfridge_iterate, 595
 gsl_multifit_fdfridge_name, 595
 gsl_multifit_fdfridge_niter, 595
 gsl_multifit_fdfridge_position, 596
 gsl_multifit_fdfridge_residual, 596
 gsl_multifit_fdfridge_set, 596
 gsl_multifit_fdfridge_set2, 596
 gsl_multifit_fdfridge_set3, 596
 gsl_multifit_fdfridge_wset, 596
 gsl_multifit_fdfridge_wset2, 597
 gsl_multifit_fdfridge_wset3, 597
 gsl_multifit_fdfsolver_alloc, 597
 gsl_multifit_fdfsolver_dif_df, 597
 gsl_multifit_fdfsolver_driver, 597
 gsl_multifit_fdfsolver_dx, 598
 gsl_multifit_fdfsolver_f, 598
 gsl_multifit_fdfsolver_free, 598
 gsl_multifit_fdfsolver_iterate, 598
 gsl_multifit_fdfsolver_jac, 598
 gsl_multifit_fdfsolver_name, 598
 gsl_multifit_fdfsolver_niter, 599
 gsl_multifit_fdfsolver_position, 599
 gsl_multifit_fdfsolver_residual, 599
 gsl_multifit_fdfsolver_set, 599
 gsl_multifit_fdfsolver_test, 599
 gsl_multifit_fdfsolver_wset, 599
 gsl_multifit_fsolver_alloc, 600
 gsl_multifit_fsolver_driver, 600
 gsl_multifit_fsolver_free, 600
 gsl_multifit_fsolver_iterate, 600
 gsl_multifit_fsolver_name, 600
 gsl_multifit_fsolver_position, 600
 gsl_multifit_fsolver_set, 601
 gsl_multifit_gradient, 601
 gsl_multifit_linear, 601
 gsl_multifit_linear_alloc, 601
 gsl_multifit_linear_applyw, 601
 gsl_multifit_linear_bsvd, 602
 gsl_multifit_linear_est, 602
 gsl_multifit_linear_free, 602
 gsl_multifit_linear_gcv, 602
 gsl_multifit_linear_gcv_calc, 602
 gsl_multifit_linear_gcv_curve, 603
 gsl_multifit_linear_gcv_init, 603
 gsl_multifit_linear_gcv_min, 603
 gsl_multifit_linear_genform1, 603
 gsl_multifit_linear_genform2, 603
 gsl_multifit_linear_l_decomp, 604
 gsl_multifit_linear_lcorner, 604
 gsl_multifit_linear_lcorner2, 604
 gsl_multifit_linear_lcurvature, 604
 gsl_multifit_linear_lcurve, 604
 gsl_multifit_linear_lk, 605
 gsl_multifit_linear_lreg, 605
 gsl_multifit_linear_isobolev, 605
 gsl_multifit_linear_rank, 605
 gsl_multifit_linear_rcond, 605
 gsl_multifit_linear_residuals, 606

- gsl_multifit_linear_solve, 606
- gsl_multifit_linear_stdform1, 606
- gsl_multifit_linear_stdform2, 606
- gsl_multifit_linear_svd, 606
- gsl_multifit_linear_tsvd, 607
- gsl_multifit_linear_wgenform2, 607
- gsl_multifit_linear_wstdform1, 607
- gsl_multifit_linear_wstdform2, 607
- gsl_multifit_robust, 608
- gsl_multifit_robust_alloc, 608
- gsl_multifit_robust_est, 608
- gsl_multifit_robust_free, 608
- gsl_multifit_robust_maxiter, 608
- gsl_multifit_robust_name, 609
- gsl_multifit_robust_residuals, 609
- gsl_multifit_robust_statistics, 609
- gsl_multifit_robust_tune, 609
- gsl_multifit_robust_weights, 609
- gsl_multifit_test_delta, 609
- gsl_multifit_test_gradient, 610
- gsl_multifit_wlinear, 610
- gsl_multifit_wlinear_svd, 610
- gsl_multifit_wlinear_tsvd, 610
- gsl_multifit_wlinear_usvd, 611
- multilarge.finc
 - fgsl_aux_multilarge_linear_alloc, 616
 - fgsl_multilarge_linear_accumulate, 612
 - fgsl_multilarge_linear_alloc, 612
 - fgsl_multilarge_linear_free, 612
 - fgsl_multilarge_linear_genform1, 612
 - fgsl_multilarge_linear_genform2, 612
 - fgsl_multilarge_linear_l_decomp, 612
 - fgsl_multilarge_linear_lcurve, 613
 - fgsl_multilarge_linear_matrix_ptr, 613
 - fgsl_multilarge_linear_name, 613
 - fgsl_multilarge_linear_rcond, 613
 - fgsl_multilarge_linear_reset, 613
 - fgsl_multilarge_linear_rhs_ptr, 613
 - fgsl_multilarge_linear_solve, 614
 - fgsl_multilarge_linear_stdform1, 614
 - fgsl_multilarge_linear_stdform2, 614
 - fgsl_multilarge_linear_wstdform1, 614
 - fgsl_multilarge_linear_wstdform2, 614
 - gsl_multilarge_linear_accumulate, 616
 - gsl_multilarge_linear_alloc, 616
 - gsl_multilarge_linear_free, 616
 - gsl_multilarge_linear_genform1, 616
 - gsl_multilarge_linear_genform2, 616
 - gsl_multilarge_linear_l_decomp, 617
 - gsl_multilarge_linear_lcurve, 617
 - gsl_multilarge_linear_matrix_ptr, 617
 - gsl_multilarge_linear_name, 617
 - gsl_multilarge_linear_rcond, 617
 - gsl_multilarge_linear_reset, 617
 - gsl_multilarge_linear_rhs_ptr, 618
 - gsl_multilarge_linear_solve, 618
 - gsl_multilarge_linear_stdform1, 618
 - gsl_multilarge_linear_stdform2, 618
 - gsl_multilarge_linear_wstdform1, 618
 - gsl_multilarge_linear_wstdform2, 619
- multimin.finc
 - fgsl_aux_multimin_fdfminimizer_alloc, 625
 - fgsl_aux_multimin_fminimizer_alloc, 625
 - fgsl_multimin_fdfminimizer_alloc, 620
 - fgsl_multimin_fdfminimizer_free, 620
 - fgsl_multimin_fdfminimizer_gradient, 620
 - fgsl_multimin_fdfminimizer_iterate, 620
 - fgsl_multimin_fdfminimizer_minimum, 620
 - fgsl_multimin_fdfminimizer_name, 620
 - fgsl_multimin_fdfminimizer_restart, 620
 - fgsl_multimin_fdfminimizer_set, 621
 - fgsl_multimin_fdfminimizer_status, 621
 - fgsl_multimin_fdfminimizer_x, 621
 - fgsl_multimin_fminimizer_alloc, 621
 - fgsl_multimin_fminimizer_free, 621
 - fgsl_multimin_fminimizer_iterate, 621
 - fgsl_multimin_fminimizer_minimum, 622
 - fgsl_multimin_fminimizer_name, 622
 - fgsl_multimin_fminimizer_set, 622
 - fgsl_multimin_fminimizer_size, 622
 - fgsl_multimin_fminimizer_status, 622
 - fgsl_multimin_fminimizer_x, 622
 - fgsl_multimin_function_cfree, 625
 - fgsl_multimin_function_cinit, 625
 - fgsl_multimin_function_fdf_cfree, 625
 - fgsl_multimin_function_fdf_cinit, 625
 - fgsl_multimin_function_fdf_free, 623
 - fgsl_multimin_function_fdf_init, 623
 - fgsl_multimin_function_free, 623
 - fgsl_multimin_function_init, 623
 - fgsl_multimin_test_gradient, 623
 - fgsl_multimin_test_size, 623
 - gsl_multimin_fdfminimizer_alloc, 625
 - gsl_multimin_fdfminimizer_free, 626
 - gsl_multimin_fdfminimizer_gradient, 626
 - gsl_multimin_fdfminimizer_iterate, 626
 - gsl_multimin_fdfminimizer_minimum, 626
 - gsl_multimin_fdfminimizer_name, 626
 - gsl_multimin_fdfminimizer_restart, 626
 - gsl_multimin_fdfminimizer_set, 626
 - gsl_multimin_fdfminimizer_x, 627
 - gsl_multimin_fminimizer_alloc, 627
 - gsl_multimin_fminimizer_free, 627
 - gsl_multimin_fminimizer_iterate, 627
 - gsl_multimin_fminimizer_minimum, 627
 - gsl_multimin_fminimizer_name, 627
 - gsl_multimin_fminimizer_set, 628
 - gsl_multimin_fminimizer_size, 628
 - gsl_multimin_fminimizer_x, 628
 - gsl_multimin_test_gradient, 628
 - gsl_multimin_test_size, 628
- multiroots.finc
 - fgsl_aux_multiroot_fdfsolver_alloc, 634
 - fgsl_aux_multiroot_fsolver_alloc, 634
 - fgsl_multiroot_fdfsolver_alloc, 629
 - fgsl_multiroot_fdfsolver_dx, 629

[fgsl_multiroot_fdfsolver_f](#), 629
[fgsl_multiroot_fdfsolver_free](#), 630
[fgsl_multiroot_fdfsolver_iterate](#), 630
[fgsl_multiroot_fdfsolver_name](#), 630
[fgsl_multiroot_fdfsolver_root](#), 630
[fgsl_multiroot_fdfsolver_set](#), 630
[fgsl_multiroot_fdfsolver_status](#), 630
[fgsl_multiroot_fsolver_alloc](#), 630
[fgsl_multiroot_fsolver_dx](#), 631
[fgsl_multiroot_fsolver_f](#), 631
[fgsl_multiroot_fsolver_free](#), 631
[fgsl_multiroot_fsolver_iterate](#), 631
[fgsl_multiroot_fsolver_name](#), 631
[fgsl_multiroot_fsolver_root](#), 631
[fgsl_multiroot_fsolver_set](#), 631
[fgsl_multiroot_fsolver_status](#), 632
[fgsl_multiroot_function_cfree](#), 634
[fgsl_multiroot_function_cinit](#), 634
[fgsl_multiroot_function_fdf_cfree](#), 634
[fgsl_multiroot_function_fdf_cinit](#), 635
[fgsl_multiroot_function_fdf_free](#), 632
[fgsl_multiroot_function_fdf_init](#), 632
[fgsl_multiroot_function_free](#), 632
[fgsl_multiroot_function_init](#), 632
[fgsl_multiroot_test_delta](#), 632
[fgsl_multiroot_test_residual](#), 633
[gsl_multiroot_fdfsolver_alloc](#), 635
[gsl_multiroot_fdfsolver_dx](#), 635
[gsl_multiroot_fdfsolver_f](#), 635
[gsl_multiroot_fdfsolver_free](#), 635
[gsl_multiroot_fdfsolver_iterate](#), 635
[gsl_multiroot_fdfsolver_name](#), 636
[gsl_multiroot_fdfsolver_root](#), 636
[gsl_multiroot_fdfsolver_set](#), 636
[gsl_multiroot_fsolver_alloc](#), 636
[gsl_multiroot_fsolver_dx](#), 636
[gsl_multiroot_fsolver_f](#), 636
[gsl_multiroot_fsolver_free](#), 637
[gsl_multiroot_fsolver_iterate](#), 637
[gsl_multiroot_fsolver_name](#), 637
[gsl_multiroot_fsolver_root](#), 637
[gsl_multiroot_fsolver_set](#), 637
[gsl_multiroot_test_delta](#), 637
[gsl_multiroot_test_residual](#), 638

nlfitt.finc

[fgsl_multifit_nlinear_alloc](#), 639
[fgsl_multifit_nlinear_covar](#), 639
[fgsl_multifit_nlinear_default_parameters](#), 639
[fgsl_multifit_nlinear_driver](#), 639
[fgsl_multifit_nlinear_fdf_cfree](#), 648
[fgsl_multifit_nlinear_fdf_cinit](#), 648
[fgsl_multifit_nlinear_fdf_free](#), 640
[fgsl_multifit_nlinear_fdf_get](#), 640
[fgsl_multifit_nlinear_fdf_init](#), 640
[fgsl_multifit_nlinear_free](#), 640
[fgsl_multifit_nlinear_init](#), 641
[fgsl_multifit_nlinear_iterate](#), 641
[fgsl_multifit_nlinear_jac](#), 641

[fgsl_multifit_nlinear_name](#), 641
[fgsl_multifit_nlinear_niter](#), 641
[fgsl_multifit_nlinear_parameters_set](#), 641
[fgsl_multifit_nlinear_position](#), 642
[fgsl_multifit_nlinear_rcond](#), 642
[fgsl_multifit_nlinear_residual](#), 642
[fgsl_multifit_nlinear_setup](#), 642
[fgsl_multifit_nlinear_status](#), 642
[fgsl_multifit_nlinear_test](#), 642
[fgsl_multifit_nlinear_trs_name](#), 643
[fgsl_multifit_nlinear_winit](#), 643
[fgsl_multilarge_nlinear_alloc](#), 643
[fgsl_multilarge_nlinear_covar](#), 643
[fgsl_multilarge_nlinear_default_parameters](#), 643
[fgsl_multilarge_nlinear_driver](#), 643
[fgsl_multilarge_nlinear_fdf_cfree](#), 648
[fgsl_multilarge_nlinear_fdf_cinit](#), 649
[fgsl_multilarge_nlinear_fdf_free](#), 644
[fgsl_multilarge_nlinear_fdf_get](#), 644
[fgsl_multilarge_nlinear_fdf_init](#), 644
[fgsl_multilarge_nlinear_free](#), 644
[fgsl_multilarge_nlinear_init](#), 645
[fgsl_multilarge_nlinear_iterate](#), 645
[fgsl_multilarge_nlinear_name](#), 645
[fgsl_multilarge_nlinear_niter](#), 645
[fgsl_multilarge_nlinear_parameters_set](#), 645
[fgsl_multilarge_nlinear_position](#), 645
[fgsl_multilarge_nlinear_rcond](#), 646
[fgsl_multilarge_nlinear_residual](#), 646
[fgsl_multilarge_nlinear_setup](#), 646
[fgsl_multilarge_nlinear_test](#), 646
[fgsl_multilarge_nlinear_trs_name](#), 646
[fgsl_multilarge_nlinear_winit](#), 646
[gsl_multifit_nlinear_alloc](#), 649
[gsl_multifit_nlinear_covar](#), 649
[gsl_multifit_nlinear_default_parameters](#), 649
[gsl_multifit_nlinear_driver](#), 649
[gsl_multifit_nlinear_fdf_get](#), 650
[gsl_multifit_nlinear_free](#), 650
[gsl_multifit_nlinear_get_scale](#), 650
[gsl_multifit_nlinear_get_solver](#), 650
[gsl_multifit_nlinear_get_trs](#), 650
[gsl_multifit_nlinear_init](#), 651
[gsl_multifit_nlinear_iterate](#), 651
[gsl_multifit_nlinear_jac](#), 651
[gsl_multifit_nlinear_name](#), 651
[gsl_multifit_nlinear_niter](#), 651
[gsl_multifit_nlinear_position](#), 651
[gsl_multifit_nlinear_rcond](#), 651
[gsl_multifit_nlinear_residual](#), 652
[gsl_multifit_nlinear_setup](#), 652
[gsl_multifit_nlinear_test](#), 652
[gsl_multifit_nlinear_trs_name](#), 652
[gsl_multifit_nlinear_winit](#), 652
[gsl_multilarge_nlinear_alloc](#), 652
[gsl_multilarge_nlinear_covar](#), 653
[gsl_multilarge_nlinear_default_parameters](#), 653
[gsl_multilarge_nlinear_driver](#), 653

- gsl_multilarge_nlinear_fdf_get, [653](#)
- gsl_multilarge_nlinear_free, [653](#)
- gsl_multilarge_nlinear_get_scale, [654](#)
- gsl_multilarge_nlinear_get_solver, [654](#)
- gsl_multilarge_nlinear_get_trs, [654](#)
- gsl_multilarge_nlinear_init, [654](#)
- gsl_multilarge_nlinear_iterate, [654](#)
- gsl_multilarge_nlinear_name, [654](#)
- gsl_multilarge_nlinear_niter, [654](#)
- gsl_multilarge_nlinear_position, [655](#)
- gsl_multilarge_nlinear_rcond, [655](#)
- gsl_multilarge_nlinear_residual, [655](#)
- gsl_multilarge_nlinear_setup, [655](#)
- gsl_multilarge_nlinear_test, [655](#)
- gsl_multilarge_nlinear_trs_name, [655](#)
- gsl_multilarge_nlinear_winit, [656](#)
- ntuple.finc
 - fgsl_aux_ntuple_data, [659](#)
 - fgsl_aux_ntuple_size, [660](#)
 - fgsl_ntuple_bookdata, [656](#)
 - fgsl_ntuple_close, [656](#)
 - fgsl_ntuple_create, [657](#)
 - fgsl_ntuple_data, [657](#)
 - fgsl_ntuple_open, [657](#)
 - fgsl_ntuple_project, [657](#)
 - fgsl_ntuple_read, [657](#)
 - fgsl_ntuple_select_fn_cfree, [660](#)
 - fgsl_ntuple_select_fn_cinit, [660](#)
 - fgsl_ntuple_select_fn_free, [657](#)
 - fgsl_ntuple_select_fn_init, [658](#)
 - fgsl_ntuple_select_fn_status, [658](#)
 - fgsl_ntuple_size, [658](#)
 - fgsl_ntuple_status, [658](#)
 - fgsl_ntuple_value_fn_cfree, [660](#)
 - fgsl_ntuple_value_fn_cinit, [660](#)
 - fgsl_ntuple_value_fn_free, [658](#)
 - fgsl_ntuple_value_fn_init, [658](#)
 - fgsl_ntuple_value_fn_status, [658](#)
 - fgsl_ntuple_write, [659](#)
 - gsl_ntuple_close, [660](#)
 - gsl_ntuple_create, [660](#)
 - gsl_ntuple_open, [661](#)
 - gsl_ntuple_project, [661](#)
 - gsl_ntuple_read, [661](#)
 - gsl_ntuple_write, [661](#)
- numit
 - fgsl::fgsl_multifit_robust_stats, [219](#)
- ode.finc
 - fgsl_aux_odeiv2_step_alloc, [677](#)
 - fgsl_aux_odeiv_step_alloc, [677](#)
 - fgsl_odeiv2_control_alloc, [663](#)
 - fgsl_odeiv2_control_errlevel, [663](#)
 - fgsl_odeiv2_control_free, [663](#)
 - fgsl_odeiv2_control_hadjust, [664](#)
 - fgsl_odeiv2_control_init, [664](#)
 - fgsl_odeiv2_control_name, [664](#)
 - fgsl_odeiv2_control_scaled_new, [664](#)
 - fgsl_odeiv2_control_set_driver, [664](#)
 - fgsl_odeiv2_control_standard_new, [665](#)
 - fgsl_odeiv2_control_status, [665](#)
 - fgsl_odeiv2_control_y_new, [665](#)
 - fgsl_odeiv2_control_yp_new, [665](#)
 - fgsl_odeiv2_driver_alloc_scaled_new, [665](#)
 - fgsl_odeiv2_driver_alloc_standard_new, [665](#)
 - fgsl_odeiv2_driver_alloc_y_new, [666](#)
 - fgsl_odeiv2_driver_alloc_yp_new, [666](#)
 - fgsl_odeiv2_driver_apply, [666](#)
 - fgsl_odeiv2_driver_apply_fixed_step, [666](#)
 - fgsl_odeiv2_driver_free, [666](#)
 - fgsl_odeiv2_driver_reset, [667](#)
 - fgsl_odeiv2_driver_reset_hstart, [667](#)
 - fgsl_odeiv2_driver_set_hmax, [667](#)
 - fgsl_odeiv2_driver_set_hmin, [667](#)
 - fgsl_odeiv2_driver_set_nmax, [667](#)
 - fgsl_odeiv2_driver_status, [667](#)
 - fgsl_odeiv2_evolve_alloc, [668](#)
 - fgsl_odeiv2_evolve_apply, [668](#)
 - fgsl_odeiv2_evolve_apply_fixed_step, [668](#)
 - fgsl_odeiv2_evolve_free, [668](#)
 - fgsl_odeiv2_evolve_reset, [668](#)
 - fgsl_odeiv2_evolve_set_driver, [669](#)
 - fgsl_odeiv2_evolve_status, [669](#)
 - fgsl_odeiv2_step_alloc, [669](#)
 - fgsl_odeiv2_step_apply, [669](#)
 - fgsl_odeiv2_step_free, [669](#)
 - fgsl_odeiv2_step_name, [669](#)
 - fgsl_odeiv2_step_order, [670](#)
 - fgsl_odeiv2_step_reset, [670](#)
 - fgsl_odeiv2_step_set_driver, [670](#)
 - fgsl_odeiv2_step_status, [670](#)
 - fgsl_odeiv2_system_cfree, [677](#)
 - fgsl_odeiv2_system_cinit, [678](#)
 - fgsl_odeiv2_system_free, [670](#)
 - fgsl_odeiv2_system_init, [670](#)
 - fgsl_odeiv2_system_status, [671](#)
 - fgsl_odeiv_control_alloc, [671](#)
 - fgsl_odeiv_control_free, [671](#)
 - fgsl_odeiv_control_hadjust, [671](#)
 - fgsl_odeiv_control_init, [671](#)
 - fgsl_odeiv_control_name, [672](#)
 - fgsl_odeiv_control_scaled_new, [672](#)
 - fgsl_odeiv_control_standard_new, [672](#)
 - fgsl_odeiv_control_status, [672](#)
 - fgsl_odeiv_control_y_new, [672](#)
 - fgsl_odeiv_control_yp_new, [673](#)
 - fgsl_odeiv_evolve_alloc, [673](#)
 - fgsl_odeiv_evolve_apply, [673](#)
 - fgsl_odeiv_evolve_free, [673](#)
 - fgsl_odeiv_evolve_reset, [673](#)
 - fgsl_odeiv_evolve_status, [673](#)
 - fgsl_odeiv_step_alloc, [674](#)
 - fgsl_odeiv_step_apply, [674](#)
 - fgsl_odeiv_step_free, [674](#)
 - fgsl_odeiv_step_name, [674](#)
 - fgsl_odeiv_step_order, [674](#)
 - fgsl_odeiv_step_reset, [674](#)

- fgsl_odeiv_step_status, 675
- fgsl_odeiv_system_cfree, 678
- fgsl_odeiv_system_cinit, 678
- fgsl_odeiv_system_free, 675
- fgsl_odeiv_system_init, 675
- fgsl_odeiv_system_status, 675
- gsl_odeiv2_control_alloc, 678
- gsl_odeiv2_control_errlevel, 678
- gsl_odeiv2_control_free, 678
- gsl_odeiv2_control_hadjust, 679
- gsl_odeiv2_control_init, 679
- gsl_odeiv2_control_name, 679
- gsl_odeiv2_control_scaled_new, 679
- gsl_odeiv2_control_set_driver, 679
- gsl_odeiv2_control_standard_new, 680
- gsl_odeiv2_control_y_new, 680
- gsl_odeiv2_control_yp_new, 680
- gsl_odeiv2_driver_alloc_scaled_new, 680
- gsl_odeiv2_driver_alloc_standard_new, 680
- gsl_odeiv2_driver_alloc_y_new, 681
- gsl_odeiv2_driver_alloc_yp_new, 681
- gsl_odeiv2_driver_apply, 681
- gsl_odeiv2_driver_apply_fixed_step, 681
- gsl_odeiv2_driver_free, 681
- gsl_odeiv2_driver_reset, 682
- gsl_odeiv2_driver_reset_hstart, 682
- gsl_odeiv2_driver_set_hmax, 682
- gsl_odeiv2_driver_set_hmin, 682
- gsl_odeiv2_driver_set_nmax, 682
- gsl_odeiv2_evolve_alloc, 682
- gsl_odeiv2_evolve_apply, 683
- gsl_odeiv2_evolve_apply_fixed_step, 683
- gsl_odeiv2_evolve_free, 683
- gsl_odeiv2_evolve_reset, 683
- gsl_odeiv2_evolve_set_driver, 683
- gsl_odeiv2_step_alloc, 684
- gsl_odeiv2_step_apply, 684
- gsl_odeiv2_step_free, 684
- gsl_odeiv2_step_name, 684
- gsl_odeiv2_step_order, 684
- gsl_odeiv2_step_reset, 684
- gsl_odeiv2_step_set_driver, 685
- gsl_odeiv_control_alloc, 685
- gsl_odeiv_control_free, 685
- gsl_odeiv_control_hadjust, 685
- gsl_odeiv_control_init, 685
- gsl_odeiv_control_name, 685
- gsl_odeiv_control_scaled_new, 686
- gsl_odeiv_control_standard_new, 686
- gsl_odeiv_control_y_new, 686
- gsl_odeiv_control_yp_new, 686
- gsl_odeiv_evolve_alloc, 686
- gsl_odeiv_evolve_apply, 686
- gsl_odeiv_evolve_free, 687
- gsl_odeiv_evolve_reset, 687
- gsl_odeiv_step_alloc, 687
- gsl_odeiv_step_apply, 687
- gsl_odeiv_step_free, 687
- gsl_odeiv_step_name, 688
- gsl_odeiv_step_order, 688
- gsl_odeiv_step_reset, 688
- params
 - fgsl::fgsl_movstat_function, 210
- permutation.finc
 - fgsl_combination_alloc, 690
 - fgsl_combination_calloc, 690
 - fgsl_combination_data, 690
 - fgsl_combination_fprintf, 690
 - fgsl_combination_fread, 690
 - fgsl_combination_free, 690
 - fgsl_combination_fscanf, 690
 - fgsl_combination_fwrite, 691
 - fgsl_combination_get, 691
 - fgsl_combination_init_first, 691
 - fgsl_combination_init_last, 691
 - fgsl_combination_k, 691
 - fgsl_combination_memcpy, 691
 - fgsl_combination_n, 692
 - fgsl_combination_next, 692
 - fgsl_combination_prev, 692
 - fgsl_combination_status, 692
 - fgsl_combination_valid, 692
 - fgsl_multiset_alloc, 692
 - fgsl_multiset_calloc, 692
 - fgsl_multiset_data, 693
 - fgsl_multiset_fprintf, 693
 - fgsl_multiset_fread, 693
 - fgsl_multiset_free, 693
 - fgsl_multiset_fscanf, 693
 - fgsl_multiset_fwrite, 693
 - fgsl_multiset_get, 694
 - fgsl_multiset_init_first, 694
 - fgsl_multiset_init_last, 694
 - fgsl_multiset_k, 694
 - fgsl_multiset_memcpy, 694
 - fgsl_multiset_n, 694
 - fgsl_multiset_next, 695
 - fgsl_multiset_prev, 695
 - fgsl_multiset_status, 695
 - fgsl_multiset_valid, 695
 - fgsl_permutation_alloc, 695
 - fgsl_permutation_calloc, 695
 - fgsl_permutation_canonical_cycles, 695
 - fgsl_permutation_canonical_to_linear, 696
 - fgsl_permutation_data, 696
 - fgsl_permutation_fprintf, 696
 - fgsl_permutation_fread, 696
 - fgsl_permutation_free, 696
 - fgsl_permutation_fscanf, 696
 - fgsl_permutation_fwrite, 697
 - fgsl_permutation_get, 697
 - fgsl_permutation_init, 697
 - fgsl_permutation_inverse, 697
 - fgsl_permutation_inversions, 697
 - fgsl_permutation_linear_cycles, 697
 - fgsl_permutation_linear_to_canonical, 698

- fgsl_permutation_memcpy, 698
- fgsl_permutation_mul, 698
- fgsl_permutation_next, 698
- fgsl_permutation_prev, 698
- fgsl_permutation_reverse, 698
- fgsl_permutation_size, 699
- fgsl_permutation_status, 699
- fgsl_permutation_swap, 699
- fgsl_permutation_valid, 699
- fgsl_permute, 699
- fgsl_permute_inverse, 699
- fgsl_permute_long, 700
- fgsl_permute_long_inverse, 700
- fgsl_permute_matrix, 700
- fgsl_permute_vector, 700
- fgsl_permute_vector_inverse, 700
- fgsl_sizeof_combination, 701
- fgsl_sizeof_multiset, 701
- fgsl_sizeof_permutation, 701
- gsl_aux_sizeof_combination, 703
- gsl_aux_sizeof_multiset, 703
- gsl_aux_sizeof_permutation, 703
- gsl_combination_alloc, 703
- gsl_combination_calloc, 703
- gsl_combination_data, 704
- gsl_combination_fprintf, 704
- gsl_combination_fread, 704
- gsl_combination_free, 704
- gsl_combination_fscanf, 704
- gsl_combination_fwrite, 704
- gsl_combination_get, 705
- gsl_combination_init_first, 705
- gsl_combination_init_last, 705
- gsl_combination_k, 705
- gsl_combination_memcpy, 705
- gsl_combination_n, 705
- gsl_combination_next, 706
- gsl_combination_prev, 706
- gsl_combination_valid, 706
- gsl_multiset_alloc, 706
- gsl_multiset_calloc, 706
- gsl_multiset_data, 706
- gsl_multiset_fprintf, 706
- gsl_multiset_fread, 707
- gsl_multiset_free, 707
- gsl_multiset_fscanf, 707
- gsl_multiset_fwrite, 707
- gsl_multiset_get, 707
- gsl_multiset_init_first, 707
- gsl_multiset_init_last, 708
- gsl_multiset_k, 708
- gsl_multiset_memcpy, 708
- gsl_multiset_n, 708
- gsl_multiset_next, 708
- gsl_multiset_prev, 708
- gsl_multiset_valid, 708
- gsl_permutation_alloc, 709
- gsl_permutation_calloc, 709
- gsl_permutation_canonical_cycles, 709
- gsl_permutation_canonical_to_linear, 709
- gsl_permutation_data, 709
- gsl_permutation_fprintf, 709
- gsl_permutation_fread, 709
- gsl_permutation_free, 710
- gsl_permutation_fscanf, 710
- gsl_permutation_fwrite, 710
- gsl_permutation_get, 710
- gsl_permutation_init, 710
- gsl_permutation_inverse, 710
- gsl_permutation_inversions, 711
- gsl_permutation_linear_cycles, 711
- gsl_permutation_linear_to_canonical, 711
- gsl_permutation_memcpy, 711
- gsl_permutation_mul, 711
- gsl_permutation_next, 711
- gsl_permutation_prev, 712
- gsl_permutation_reverse, 712
- gsl_permutation_size, 712
- gsl_permutation_swap, 712
- gsl_permutation_valid, 712
- gsl_permute, 712
- gsl_permute_inverse, 713
- gsl_permute_long, 713
- gsl_permute_long_inverse, 713
- gsl_permute_matrix, 713
- gsl_permute_vector, 713
- gsl_permute_vector_inverse, 714
- poly.finc
 - fgsl_complex_poly_complex_eval, 715
 - fgsl_poly_complex_eval, 715
 - fgsl_poly_complex_solve, 715
 - fgsl_poly_complex_solve_cubic, 715
 - fgsl_poly_complex_solve_quadratic, 715
 - fgsl_poly_complex_workspace_alloc, 715
 - fgsl_poly_complex_workspace_free, 716
 - fgsl_poly_complex_workspace_stat, 716
 - fgsl_poly_dd_eval, 716
 - fgsl_poly_dd_hermite_init, 716
 - fgsl_poly_dd_init, 716
 - fgsl_poly_dd_taylor, 716
 - fgsl_poly_eval, 717
 - fgsl_poly_eval_derivs, 717
 - fgsl_poly_solve_cubic, 717
 - fgsl_poly_solve_quadratic, 717
 - gsl_complex_poly_complex_eval, 718
 - gsl_poly_complex_eval, 718
 - gsl_poly_complex_solve, 719
 - gsl_poly_complex_solve_cubic, 719
 - gsl_poly_complex_solve_quadratic, 719
 - gsl_poly_complex_workspace_alloc, 719
 - gsl_poly_complex_workspace_free, 719
 - gsl_poly_dd_eval, 720
 - gsl_poly_dd_hermite_init, 720
 - gsl_poly_dd_init, 720
 - gsl_poly_dd_taylor, 720
 - gsl_poly_eval, 720

- gsl_poly_eval_derivs, [721](#)
- gsl_poly_solve_cubic, [721](#)
- gsl_poly_solve_quadratic, [721](#)
- r
 - fgsl::fgsl_multifit_robust_stats, [220](#)
- rmse
 - fgsl::fgsl_multifit_robust_stats, [220](#)
- rng.finc
 - fgsl_aux_qrng_assign, [765](#)
 - fgsl_aux_rng_assign, [765](#)
 - fgsl_cdf_beta_p, [725](#)
 - fgsl_cdf_beta_pinv, [725](#)
 - fgsl_cdf_beta_q, [726](#)
 - fgsl_cdf_beta_qinv, [726](#)
 - fgsl_cdf_binomial_p, [726](#)
 - fgsl_cdf_binomial_q, [726](#)
 - fgsl_cdf_cauchy_p, [726](#)
 - fgsl_cdf_cauchy_pinv, [726](#)
 - fgsl_cdf_cauchy_q, [727](#)
 - fgsl_cdf_cauchy_qinv, [727](#)
 - fgsl_cdf_chisq_p, [727](#)
 - fgsl_cdf_chisq_pinv, [727](#)
 - fgsl_cdf_chisq_q, [727](#)
 - fgsl_cdf_chisq_qinv, [727](#)
 - fgsl_cdf_exponential_p, [728](#)
 - fgsl_cdf_exponential_pinv, [728](#)
 - fgsl_cdf_exponential_q, [728](#)
 - fgsl_cdf_exponential_qinv, [728](#)
 - fgsl_cdf_exppow_p, [728](#)
 - fgsl_cdf_exppow_q, [728](#)
 - fgsl_cdf_fdist_p, [729](#)
 - fgsl_cdf_fdist_pinv, [729](#)
 - fgsl_cdf_fdist_q, [729](#)
 - fgsl_cdf_fdist_qinv, [729](#)
 - fgsl_cdf_flat_p, [729](#)
 - fgsl_cdf_flat_pinv, [729](#)
 - fgsl_cdf_flat_q, [730](#)
 - fgsl_cdf_flat_qinv, [730](#)
 - fgsl_cdf_gamma_p, [730](#)
 - fgsl_cdf_gamma_pinv, [730](#)
 - fgsl_cdf_gamma_q, [730](#)
 - fgsl_cdf_gamma_qinv, [730](#)
 - fgsl_cdf_gaussian_p, [731](#)
 - fgsl_cdf_gaussian_pinv, [731](#)
 - fgsl_cdf_gaussian_q, [731](#)
 - fgsl_cdf_gaussian_qinv, [731](#)
 - fgsl_cdf_geometric_p, [731](#)
 - fgsl_cdf_geometric_q, [731](#)
 - fgsl_cdf_gumbel1_p, [732](#)
 - fgsl_cdf_gumbel1_pinv, [732](#)
 - fgsl_cdf_gumbel1_q, [732](#)
 - fgsl_cdf_gumbel1_qinv, [732](#)
 - fgsl_cdf_gumbel2_p, [732](#)
 - fgsl_cdf_gumbel2_pinv, [732](#)
 - fgsl_cdf_gumbel2_q, [733](#)
 - fgsl_cdf_gumbel2_qinv, [733](#)
 - fgsl_cdf_hypergeometric_p, [733](#)
 - fgsl_cdf_hypergeometric_q, [733](#)
 - fgsl_cdf_laplace_p, [733](#)
 - fgsl_cdf_laplace_pinv, [734](#)
 - fgsl_cdf_laplace_q, [734](#)
 - fgsl_cdf_laplace_qinv, [734](#)
 - fgsl_cdf_logistic_p, [734](#)
 - fgsl_cdf_logistic_pinv, [734](#)
 - fgsl_cdf_logistic_q, [734](#)
 - fgsl_cdf_logistic_qinv, [735](#)
 - fgsl_cdf_lognormal_p, [735](#)
 - fgsl_cdf_lognormal_pinv, [735](#)
 - fgsl_cdf_lognormal_q, [735](#)
 - fgsl_cdf_lognormal_qinv, [735](#)
 - fgsl_cdf_negative_binomial_p, [735](#)
 - fgsl_cdf_negative_binomial_q, [736](#)
 - fgsl_cdf_pareto_p, [736](#)
 - fgsl_cdf_pareto_pinv, [736](#)
 - fgsl_cdf_pareto_q, [736](#)
 - fgsl_cdf_pareto_qinv, [736](#)
 - fgsl_cdf_pascal_p, [736](#)
 - fgsl_cdf_pascal_q, [737](#)
 - fgsl_cdf_poisson_p, [737](#)
 - fgsl_cdf_poisson_q, [737](#)
 - fgsl_cdf_rayleigh_p, [737](#)
 - fgsl_cdf_rayleigh_pinv, [737](#)
 - fgsl_cdf_rayleigh_q, [737](#)
 - fgsl_cdf_rayleigh_qinv, [738](#)
 - fgsl_cdf_tdist_p, [738](#)
 - fgsl_cdf_tdist_pinv, [738](#)
 - fgsl_cdf_tdist_q, [738](#)
 - fgsl_cdf_tdist_qinv, [738](#)
 - fgsl_cdf_ugaussian_p, [738](#)
 - fgsl_cdf_ugaussian_pinv, [739](#)
 - fgsl_cdf_ugaussian_q, [739](#)
 - fgsl_cdf_ugaussian_qinv, [739](#)
 - fgsl_cdf_weibull_p, [739](#)
 - fgsl_cdf_weibull_pinv, [739](#)
 - fgsl_cdf_weibull_q, [739](#)
 - fgsl_cdf_weibull_qinv, [740](#)
 - fgsl_qrng_alloc, [740](#)
 - fgsl_qrng_clone, [740](#)
 - fgsl_qrng_free, [740](#)
 - fgsl_qrng_get, [740](#)
 - fgsl_qrng_init, [740](#)
 - fgsl_qrng_memcpy, [741](#)
 - fgsl_qrng_name, [741](#)
 - fgsl_qrng_status, [741](#)
 - fgsl_ran_bernoulli, [741](#)
 - fgsl_ran_bernoulli_pdf, [741](#)
 - fgsl_ran_beta, [741](#)
 - fgsl_ran_beta_pdf, [742](#)
 - fgsl_ran_binomial, [742](#)
 - fgsl_ran_binomial_pdf, [742](#)
 - fgsl_ran_bivariate_gaussian, [742](#)
 - fgsl_ran_bivariate_gaussian_pdf, [742](#)
 - fgsl_ran_cauchy, [743](#)
 - fgsl_ran_cauchy_pdf, [743](#)
 - fgsl_ran_chisq, [743](#)
 - fgsl_ran_chisq_pdf, [743](#)

- fgsl_ran_choose, 743
- fgsl_ran_dir_2d, 743
- fgsl_ran_dir_2d_trig_method, 744
- fgsl_ran_dir_3d, 744
- fgsl_ran_dir_nd, 744
- fgsl_ran_dirichlet, 744
- fgsl_ran_dirichlet_lnpdf, 744
- fgsl_ran_dirichlet_pdf, 745
- fgsl_ran_discrete, 745
- fgsl_ran_discrete_free, 745
- fgsl_ran_discrete_pdf, 745
- fgsl_ran_discrete_preproc, 745
- fgsl_ran_discrete_t_status, 745
- fgsl_ran_exponential, 746
- fgsl_ran_exponential_pdf, 746
- fgsl_ran_exppow, 746
- fgsl_ran_exppow_pdf, 746
- fgsl_ran_fdist, 746
- fgsl_ran_fdist_pdf, 746
- fgsl_ran_flat, 747
- fgsl_ran_flat_pdf, 747
- fgsl_ran_gamma, 747
- fgsl_ran_gamma_mt, 747
- fgsl_ran_gamma_pdf, 747
- fgsl_ran_gaussian, 747
- fgsl_ran_gaussian_pdf, 748
- fgsl_ran_gaussian_ratio_method, 748
- fgsl_ran_gaussian_tail, 748
- fgsl_ran_gaussian_tail_pdf, 748
- fgsl_ran_gaussian_ziggurat, 748
- fgsl_ran_geometric, 748
- fgsl_ran_geometric_pdf, 749
- fgsl_ran_gumbel1, 749
- fgsl_ran_gumbel1_pdf, 749
- fgsl_ran_gumbel2, 749
- fgsl_ran_gumbel2_pdf, 749
- fgsl_ran_hypergeometric, 749
- fgsl_ran_hypergeometric_pdf, 750
- fgsl_ran_landau, 750
- fgsl_ran_landau_pdf, 750
- fgsl_ran_laplace, 750
- fgsl_ran_laplace_pdf, 750
- fgsl_ran_levy, 750
- fgsl_ran_levy_skew, 751
- fgsl_ran_logarithmic, 751
- fgsl_ran_logarithmic_pdf, 751
- fgsl_ran_logistic, 751
- fgsl_ran_logistic_pdf, 751
- fgsl_ran_lognormal, 751
- fgsl_ran_lognormal_pdf, 752
- fgsl_ran_multinomial, 752
- fgsl_ran_multinomial_lnpdf, 752
- fgsl_ran_multinomial_pdf, 752
- fgsl_ran_multivariate_gaussian, 752
- fgsl_ran_multivariate_gaussian_log_pdf, 752
- fgsl_ran_multivariate_gaussian_mean, 753
- fgsl_ran_multivariate_gaussian_pdf, 753
- fgsl_ran_multivariate_gaussian_vcov, 753
- fgsl_ran_negative_binomial, 753
- fgsl_ran_negative_binomial_pdf, 753
- fgsl_ran_pareto, 754
- fgsl_ran_pareto_pdf, 754
- fgsl_ran_pascal, 754
- fgsl_ran_pascal_pdf, 754
- fgsl_ran_poisson, 754
- fgsl_ran_poisson_pdf, 754
- fgsl_ran_rayleigh, 755
- fgsl_ran_rayleigh_pdf, 755
- fgsl_ran_rayleigh_tail, 755
- fgsl_ran_rayleigh_tail_pdf, 755
- fgsl_ran_sample, 755
- fgsl_ran_shuffle, 755
- fgsl_ran_shuffle_double, 756
- fgsl_ran_shuffle_size_t, 756
- fgsl_ran_tdist, 756
- fgsl_ran_tdist_pdf, 756
- fgsl_ran_ugaussian, 756
- fgsl_ran_ugaussian_pdf, 756
- fgsl_ran_ugaussian_ratio_method, 757
- fgsl_ran_ugaussian_tail, 757
- fgsl_ran_ugaussian_tail_pdf, 757
- fgsl_ran_weibull, 757
- fgsl_ran_weibull_pdf, 757
- fgsl_ran_wishart, 757
- fgsl_ran_wishart_log_pdf, 758
- fgsl_ran_wishart_pdf, 758
- fgsl_rng_alloc, 758
- fgsl_rng_c_ptr, 758
- fgsl_rng_clone, 758
- fgsl_rng_env_setup, 759
- fgsl_rng_fread, 759
- fgsl_rng_free, 759
- fgsl_rng_fwrite, 759
- fgsl_rng_get, 759
- fgsl_rng_max, 759
- fgsl_rng_memcpy, 759
- fgsl_rng_min, 760
- fgsl_rng_name, 760
- fgsl_rng_set, 760
- fgsl_rng_status, 760
- fgsl_rng_uniform, 760
- fgsl_rng_uniform_int, 760
- fgsl_rng_uniform_pos, 761
- gsl_cdf_beta_p, 765
- gsl_cdf_beta_pinv, 765
- gsl_cdf_beta_q, 766
- gsl_cdf_beta_qinv, 766
- gsl_cdf_binomial_p, 766
- gsl_cdf_binomial_q, 766
- gsl_cdf_cauchy_p, 766
- gsl_cdf_cauchy_pinv, 766
- gsl_cdf_cauchy_q, 767
- gsl_cdf_cauchy_qinv, 767
- gsl_cdf_chisq_p, 767
- gsl_cdf_chisq_pinv, 767
- gsl_cdf_chisq_q, 767

- [gsl_cdf_chisq_qinv, 767](#)
- [gsl_cdf_exponential_p, 768](#)
- [gsl_cdf_exponential_pinv, 768](#)
- [gsl_cdf_exponential_q, 768](#)
- [gsl_cdf_exponential_qinv, 768](#)
- [gsl_cdf_exppow_p, 768](#)
- [gsl_cdf_exppow_q, 768](#)
- [gsl_cdf_fdist_p, 769](#)
- [gsl_cdf_fdist_pinv, 769](#)
- [gsl_cdf_fdist_q, 769](#)
- [gsl_cdf_fdist_qinv, 769](#)
- [gsl_cdf_flat_p, 769](#)
- [gsl_cdf_flat_pinv, 769](#)
- [gsl_cdf_flat_q, 770](#)
- [gsl_cdf_flat_qinv, 770](#)
- [gsl_cdf_gamma_p, 770](#)
- [gsl_cdf_gamma_pinv, 770](#)
- [gsl_cdf_gamma_q, 770](#)
- [gsl_cdf_gamma_qinv, 770](#)
- [gsl_cdf_gaussian_p, 771](#)
- [gsl_cdf_gaussian_pinv, 771](#)
- [gsl_cdf_gaussian_q, 771](#)
- [gsl_cdf_gaussian_qinv, 771](#)
- [gsl_cdf_geometric_p, 771](#)
- [gsl_cdf_geometric_q, 771](#)
- [gsl_cdf_gumbel1_p, 772](#)
- [gsl_cdf_gumbel1_pinv, 772](#)
- [gsl_cdf_gumbel1_q, 772](#)
- [gsl_cdf_gumbel1_qinv, 772](#)
- [gsl_cdf_gumbel2_p, 772](#)
- [gsl_cdf_gumbel2_pinv, 772](#)
- [gsl_cdf_gumbel2_q, 773](#)
- [gsl_cdf_gumbel2_qinv, 773](#)
- [gsl_cdf_hypergeometric_p, 773](#)
- [gsl_cdf_hypergeometric_q, 773](#)
- [gsl_cdf_laplace_p, 773](#)
- [gsl_cdf_laplace_pinv, 774](#)
- [gsl_cdf_laplace_q, 774](#)
- [gsl_cdf_laplace_qinv, 774](#)
- [gsl_cdf_logistic_p, 774](#)
- [gsl_cdf_logistic_pinv, 774](#)
- [gsl_cdf_logistic_q, 774](#)
- [gsl_cdf_logistic_qinv, 775](#)
- [gsl_cdf_lognormal_p, 775](#)
- [gsl_cdf_lognormal_pinv, 775](#)
- [gsl_cdf_lognormal_q, 775](#)
- [gsl_cdf_lognormal_qinv, 775](#)
- [gsl_cdf_negative_binomial_p, 775](#)
- [gsl_cdf_negative_binomial_q, 776](#)
- [gsl_cdf_pareto_p, 776](#)
- [gsl_cdf_pareto_pinv, 776](#)
- [gsl_cdf_pareto_q, 776](#)
- [gsl_cdf_pareto_qinv, 776](#)
- [gsl_cdf_pascal_p, 776](#)
- [gsl_cdf_pascal_q, 777](#)
- [gsl_cdf_poisson_p, 777](#)
- [gsl_cdf_poisson_q, 777](#)
- [gsl_cdf_rayleigh_p, 777](#)
- [gsl_cdf_rayleigh_pinv, 777](#)
- [gsl_cdf_rayleigh_q, 777](#)
- [gsl_cdf_rayleigh_qinv, 778](#)
- [gsl_cdf_tdist_p, 778](#)
- [gsl_cdf_tdist_pinv, 778](#)
- [gsl_cdf_tdist_q, 778](#)
- [gsl_cdf_tdist_qinv, 778](#)
- [gsl_cdf_ugaussian_p, 778](#)
- [gsl_cdf_ugaussian_pinv, 779](#)
- [gsl_cdf_ugaussian_q, 779](#)
- [gsl_cdf_ugaussian_qinv, 779](#)
- [gsl_cdf_weibull_p, 779](#)
- [gsl_cdf_weibull_pinv, 779](#)
- [gsl_cdf_weibull_q, 779](#)
- [gsl_cdf_weibull_qinv, 780](#)
- [gsl_qrng_alloc, 780](#)
- [gsl_qrng_clone, 780](#)
- [gsl_qrng_free, 780](#)
- [gsl_qrng_get, 780](#)
- [gsl_qrng_init, 780](#)
- [gsl_qrng_memcpy, 781](#)
- [gsl_qrng_name, 781](#)
- [gsl_ran_bernoulli, 781](#)
- [gsl_ran_bernoulli_pdf, 781](#)
- [gsl_ran_beta, 781](#)
- [gsl_ran_beta_pdf, 781](#)
- [gsl_ran_binomial, 782](#)
- [gsl_ran_binomial_pdf, 782](#)
- [gsl_ran_bivariate_gaussian, 782](#)
- [gsl_ran_bivariate_gaussian_pdf, 782](#)
- [gsl_ran_cauchy, 782](#)
- [gsl_ran_cauchy_pdf, 783](#)
- [gsl_ran_chisq, 783](#)
- [gsl_ran_chisq_pdf, 783](#)
- [gsl_ran_choose, 783](#)
- [gsl_ran_dir_2d, 783](#)
- [gsl_ran_dir_2d_trig_method, 783](#)
- [gsl_ran_dir_3d, 784](#)
- [gsl_ran_dir_nd, 784](#)
- [gsl_ran_dirichlet, 784](#)
- [gsl_ran_dirichlet_lnpdf, 784](#)
- [gsl_ran_dirichlet_pdf, 784](#)
- [gsl_ran_discrete, 785](#)
- [gsl_ran_discrete_free, 785](#)
- [gsl_ran_discrete_pdf, 785](#)
- [gsl_ran_discrete_preproc, 785](#)
- [gsl_ran_exponential, 785](#)
- [gsl_ran_exponential_pdf, 785](#)
- [gsl_ran_exppow, 786](#)
- [gsl_ran_exppow_pdf, 786](#)
- [gsl_ran_fdist, 786](#)
- [gsl_ran_fdist_pdf, 786](#)
- [gsl_ran_flat, 786](#)
- [gsl_ran_flat_pdf, 786](#)
- [gsl_ran_gamma, 787](#)
- [gsl_ran_gamma_mt, 787](#)
- [gsl_ran_gamma_pdf, 787](#)
- [gsl_ran_gaussian, 787](#)

- gsl_ran_gaussian_pdf, [787](#)
- gsl_ran_gaussian_ratio_method, [787](#)
- gsl_ran_gaussian_tail, [788](#)
- gsl_ran_gaussian_tail_pdf, [788](#)
- gsl_ran_gaussian_ziggurat, [788](#)
- gsl_ran_geometric, [788](#)
- gsl_ran_geometric_pdf, [788](#)
- gsl_ran_gumbel1, [788](#)
- gsl_ran_gumbel1_pdf, [789](#)
- gsl_ran_gumbel2, [789](#)
- gsl_ran_gumbel2_pdf, [789](#)
- gsl_ran_hypergeometric, [789](#)
- gsl_ran_hypergeometric_pdf, [789](#)
- gsl_ran_landau, [790](#)
- gsl_ran_landau_pdf, [790](#)
- gsl_ran_laplace, [790](#)
- gsl_ran_laplace_pdf, [790](#)
- gsl_ran_levy, [790](#)
- gsl_ran_levy_skew, [790](#)
- gsl_ran_logarithmic, [791](#)
- gsl_ran_logarithmic_pdf, [791](#)
- gsl_ran_logistic, [791](#)
- gsl_ran_logistic_pdf, [791](#)
- gsl_ran_lognormal, [791](#)
- gsl_ran_lognormal_pdf, [791](#)
- gsl_ran_multinomial, [792](#)
- gsl_ran_multinomial_lnpdf, [792](#)
- gsl_ran_multinomial_pdf, [792](#)
- gsl_ran_multivariate_gaussian, [792](#)
- gsl_ran_multivariate_gaussian_log_pdf, [792](#)
- gsl_ran_multivariate_gaussian_mean, [793](#)
- gsl_ran_multivariate_gaussian_pdf, [793](#)
- gsl_ran_multivariate_gaussian_vcov, [793](#)
- gsl_ran_negative_binomial, [793](#)
- gsl_ran_negative_binomial_pdf, [793](#)
- gsl_ran_pareto, [794](#)
- gsl_ran_pareto_pdf, [794](#)
- gsl_ran_pascal, [794](#)
- gsl_ran_pascal_pdf, [794](#)
- gsl_ran_poisson, [794](#)
- gsl_ran_poisson_pdf, [794](#)
- gsl_ran_rayleigh, [795](#)
- gsl_ran_rayleigh_pdf, [795](#)
- gsl_ran_rayleigh_tail, [795](#)
- gsl_ran_rayleigh_tail_pdf, [795](#)
- gsl_ran_sample, [795](#)
- gsl_ran_shuffle, [795](#)
- gsl_ran_tdist, [796](#)
- gsl_ran_tdist_pdf, [796](#)
- gsl_ran_ugaussian, [796](#)
- gsl_ran_ugaussian_pdf, [796](#)
- gsl_ran_ugaussian_ratio_method, [796](#)
- gsl_ran_ugaussian_tail, [796](#)
- gsl_ran_ugaussian_tail_pdf, [797](#)
- gsl_ran_weibull, [797](#)
- gsl_ran_weibull_pdf, [797](#)
- gsl_ran_wishart, [797](#)
- gsl_ran_wishart_log_pdf, [797](#)
- gsl_ran_wishart_pdf, [798](#)
- gsl_rng_alloc, [798](#)
- gsl_rng_clone, [798](#)
- gsl_rng_env_setup, [798](#)
- gsl_rng_fread, [798](#)
- gsl_rng_free, [798](#)
- gsl_rng_fwrite, [799](#)
- gsl_rng_get, [799](#)
- gsl_rng_max, [799](#)
- gsl_rng_memcpy, [799](#)
- gsl_rng_min, [799](#)
- gsl_rng_name, [799](#)
- gsl_rng_set, [799](#)
- gsl_rng_uniform, [800](#)
- gsl_rng_uniform_int, [800](#)
- gsl_rng_uniform_pos, [800](#)
- roots.finc
 - fgsl_aux_fdfsolver_alloc, [804](#)
 - fgsl_aux_fsolver_alloc, [804](#)
 - fgsl_root_fdfsolver_alloc, [801](#)
 - fgsl_root_fdfsolver_free, [801](#)
 - fgsl_root_fdfsolver_iterate, [801](#)
 - fgsl_root_fdfsolver_name, [801](#)
 - fgsl_root_fdfsolver_root, [801](#)
 - fgsl_root_fdfsolver_set, [801](#)
 - fgsl_root_fdfsolver_status, [801](#)
 - fgsl_root_fsolver_alloc, [802](#)
 - fgsl_root_fsolver_free, [802](#)
 - fgsl_root_fsolver_iterate, [802](#)
 - fgsl_root_fsolver_name, [802](#)
 - fgsl_root_fsolver_root, [802](#)
 - fgsl_root_fsolver_set, [802](#)
 - fgsl_root_fsolver_status, [802](#)
 - fgsl_root_fsolver_x_lower, [803](#)
 - fgsl_root_fsolver_x_upper, [803](#)
 - fgsl_root_test_delta, [803](#)
 - fgsl_root_test_interval, [803](#)
 - fgsl_root_test_residual, [803](#)
 - gsl_root_fdfsolver_alloc, [805](#)
 - gsl_root_fdfsolver_free, [805](#)
 - gsl_root_fdfsolver_iterate, [805](#)
 - gsl_root_fdfsolver_name, [805](#)
 - gsl_root_fdfsolver_root, [805](#)
 - gsl_root_fdfsolver_set, [805](#)
 - gsl_root_fsolver_alloc, [805](#)
 - gsl_root_fsolver_free, [806](#)
 - gsl_root_fsolver_iterate, [806](#)
 - gsl_root_fsolver_name, [806](#)
 - gsl_root_fsolver_root, [806](#)
 - gsl_root_fsolver_set, [806](#)
 - gsl_root_fsolver_x_lower, [806](#)
 - gsl_root_fsolver_x_upper, [807](#)
 - gsl_root_test_delta, [807](#)
 - gsl_root_test_interval, [807](#)
 - gsl_root_test_residual, [807](#)
- rsq
 - fgsl::fgsl_multifit_robust_stats, [220](#)
- rstat.finc

- fgsl_rstat_add, 808
- fgsl_rstat_alloc, 808
- fgsl_rstat_free, 808
- fgsl_rstat_kurtosis, 808
- fgsl_rstat_max, 809
- fgsl_rstat_mean, 809
- fgsl_rstat_median, 809
- fgsl_rstat_min, 809
- fgsl_rstat_n, 809
- fgsl_rstat_quantile_add, 809
- fgsl_rstat_quantile_alloc, 809
- fgsl_rstat_quantile_free, 810
- fgsl_rstat_quantile_get, 810
- fgsl_rstat_quantile_reset, 810
- fgsl_rstat_reset, 810
- fgsl_rstat_rms, 810
- fgsl_rstat_sd, 810
- fgsl_rstat_sd_mean, 810
- fgsl_rstat_skew, 811
- fgsl_rstat_variance, 811
- gsl_rstat_add, 812
- gsl_rstat_alloc, 812
- gsl_rstat_free, 812
- gsl_rstat_kurtosis, 812
- gsl_rstat_max, 812
- gsl_rstat_mean, 812
- gsl_rstat_median, 813
- gsl_rstat_min, 813
- gsl_rstat_n, 813
- gsl_rstat_quantile_add, 813
- gsl_rstat_quantile_alloc, 813
- gsl_rstat_quantile_free, 813
- gsl_rstat_quantile_get, 813
- gsl_rstat_quantile_reset, 814
- gsl_rstat_reset, 814
- gsl_rstat_rms, 814
- gsl_rstat_sd, 814
- gsl_rstat_sd_mean, 814
- gsl_rstat_skew, 814
- gsl_rstat_variance, 814
- sigma
 - fgsl::fgsl_multifit_robust_stats, 220
- sigma_mad
 - fgsl::fgsl_multifit_robust_stats, 220
- sigma_ols
 - fgsl::fgsl_multifit_robust_stats, 220
- sigma_rob
 - fgsl::fgsl_multifit_robust_stats, 220
- siman.finc
 - fgsl_siman_params_free, 815
 - fgsl_siman_params_init, 815
 - fgsl_siman_params_t_status, 815
 - fgsl_siman_solve, 815
 - gsl_siman_solve, 816
- sort.finc
 - fgsl_heapsort, 817
 - fgsl_heapsort_index, 818
 - fgsl_sort2_double, 818
 - fgsl_sort_double, 818
 - fgsl_sort_double_index, 818
 - fgsl_sort_double_largest, 818
 - fgsl_sort_double_largest_index, 819
 - fgsl_sort_double_smallest, 819
 - fgsl_sort_double_smallest_index, 819
 - fgsl_sort_long, 819
 - fgsl_sort_long_index, 819
 - fgsl_sort_long_largest, 820
 - fgsl_sort_long_largest_index, 820
 - fgsl_sort_long_smallest, 820
 - fgsl_sort_long_smallest_index, 820
 - fgsl_sort_vector, 820
 - fgsl_sort_vector2, 821
 - fgsl_sort_vector_index, 821
 - fgsl_sort_vector_largest, 821
 - fgsl_sort_vector_largest_index, 821
 - fgsl_sort_vector_smallest, 821
 - fgsl_sort_vector_smallest_index, 821
 - gsl_heapsort, 823
 - gsl_heapsort_index, 823
 - gsl_sort, 823
 - gsl_sort2, 823
 - gsl_sort_index, 823
 - gsl_sort_largest, 824
 - gsl_sort_largest_index, 824
 - gsl_sort_long, 824
 - gsl_sort_long_index, 824
 - gsl_sort_long_largest, 824
 - gsl_sort_long_largest_index, 825
 - gsl_sort_long_smallest, 825
 - gsl_sort_long_smallest_index, 825
 - gsl_sort_smallest, 825
 - gsl_sort_smallest_index, 825
 - gsl_sort_vector, 826
 - gsl_sort_vector2, 826
 - gsl_sort_vector_index, 826
 - gsl_sort_vector_largest, 826
 - gsl_sort_vector_largest_index, 826
 - gsl_sort_vector_smallest, 826
 - gsl_sort_vector_smallest_index, 827
- specfunc.finc
 - fgsl_sf_airy_ai, 833
 - fgsl_sf_airy_ai_deriv, 833
 - fgsl_sf_airy_ai_deriv_e, 833
 - fgsl_sf_airy_ai_deriv_scaled, 833
 - fgsl_sf_airy_ai_deriv_scaled_e, 834
 - fgsl_sf_airy_ai_e, 834
 - fgsl_sf_airy_ai_scaled, 834
 - fgsl_sf_airy_ai_scaled_e, 834
 - fgsl_sf_airy_bi, 834
 - fgsl_sf_airy_bi_deriv, 834
 - fgsl_sf_airy_bi_deriv_e, 835
 - fgsl_sf_airy_bi_deriv_scaled, 835
 - fgsl_sf_airy_bi_deriv_scaled_e, 835
 - fgsl_sf_airy_bi_e, 835
 - fgsl_sf_airy_bi_scaled, 835
 - fgsl_sf_airy_bi_scaled_e, 835

fgsl_sf_airy_zero_ai, 836
fgsl_sf_airy_zero_ai_deriv, 836
fgsl_sf_airy_zero_ai_deriv_e, 836
fgsl_sf_airy_zero_ai_e, 836
fgsl_sf_airy_zero_bi, 836
fgsl_sf_airy_zero_bi_deriv, 836
fgsl_sf_airy_zero_bi_deriv_e, 837
fgsl_sf_airy_zero_bi_e, 837
fgsl_sf_angle_restrict_pos, 897
fgsl_sf_angle_restrict_pos_e, 837
fgsl_sf_angle_restrict_symm, 897
fgsl_sf_angle_restrict_symm_e, 837
fgsl_sf_atanint, 897
fgsl_sf_atanint_e, 837
fgsl_sf_bessel_ic0, 897
fgsl_sf_bessel_ic0_e, 837
fgsl_sf_bessel_ic0_scaled, 897
fgsl_sf_bessel_ic0_scaled_e, 838
fgsl_sf_bessel_ic1, 898
fgsl_sf_bessel_ic1_e, 838
fgsl_sf_bessel_ic1_scaled, 898
fgsl_sf_bessel_ic1_scaled_e, 838
fgsl_sf_bessel_icn, 898
fgsl_sf_bessel_icn_array, 898
fgsl_sf_bessel_icn_e, 838
fgsl_sf_bessel_icn_scaled, 898
fgsl_sf_bessel_icn_scaled_array, 898
fgsl_sf_bessel_icn_scaled_e, 838
fgsl_sf_bessel_inu, 899
fgsl_sf_bessel_inu_e, 838
fgsl_sf_bessel_inu_scaled, 899
fgsl_sf_bessel_inu_scaled_e, 839
fgsl_sf_bessel_is0_scaled, 899
fgsl_sf_bessel_is0_scaled_e, 839
fgsl_sf_bessel_is1_scaled, 899
fgsl_sf_bessel_is1_scaled_e, 839
fgsl_sf_bessel_is2_scaled, 899
fgsl_sf_bessel_is2_scaled_e, 839
fgsl_sf_bessel_isl_scaled, 899
fgsl_sf_bessel_isl_scaled_array, 900
fgsl_sf_bessel_isl_scaled_e, 839
fgsl_sf_bessel_jc0, 900
fgsl_sf_bessel_jc0_e, 839
fgsl_sf_bessel_jc1, 900
fgsl_sf_bessel_jc1_e, 840
fgsl_sf_bessel_jcn, 900
fgsl_sf_bessel_jcn_array, 900
fgsl_sf_bessel_jcn_e, 840
fgsl_sf_bessel_jnu, 900
fgsl_sf_bessel_jnu_e, 840
fgsl_sf_bessel_js0, 901
fgsl_sf_bessel_js0_e, 840
fgsl_sf_bessel_js1, 901
fgsl_sf_bessel_js1_e, 840
fgsl_sf_bessel_js2, 901
fgsl_sf_bessel_js2_e, 840
fgsl_sf_bessel_jsl, 901
fgsl_sf_bessel_jsl_array, 901
fgsl_sf_bessel_jsl_e, 841
fgsl_sf_bessel_jsl_stepped_array, 901
fgsl_sf_bessel_kc0, 902
fgsl_sf_bessel_kc0_e, 841
fgsl_sf_bessel_kc0_scaled, 902
fgsl_sf_bessel_kc0_scaled_e, 841
fgsl_sf_bessel_kc1, 902
fgsl_sf_bessel_kc1_e, 841
fgsl_sf_bessel_kc1_scaled, 902
fgsl_sf_bessel_kc1_scaled_e, 841
fgsl_sf_bessel_kcn, 902
fgsl_sf_bessel_kcn_array, 902
fgsl_sf_bessel_kcn_e, 841
fgsl_sf_bessel_kcn_scaled, 903
fgsl_sf_bessel_kcn_scaled_array, 903
fgsl_sf_bessel_kcn_scaled_e, 842
fgsl_sf_bessel_knu, 903
fgsl_sf_bessel_knu_e, 842
fgsl_sf_bessel_knu_scaled, 903
fgsl_sf_bessel_knu_scaled_e, 842
fgsl_sf_bessel_ks0_scaled, 903
fgsl_sf_bessel_ks0_scaled_e, 842
fgsl_sf_bessel_ks1_scaled, 903
fgsl_sf_bessel_ks1_scaled_e, 842
fgsl_sf_bessel_ks2_scaled, 904
fgsl_sf_bessel_ks2_scaled_e, 842
fgsl_sf_bessel_ksl_scaled, 904
fgsl_sf_bessel_ksl_scaled_array, 904
fgsl_sf_bessel_ksl_scaled_e, 843
fgsl_sf_bessel_lnknu, 904
fgsl_sf_bessel_lnknu_e, 843
fgsl_sf_bessel_sequence_jnu_e, 843
fgsl_sf_bessel_yc0, 904
fgsl_sf_bessel_yc0_e, 843
fgsl_sf_bessel_yc1, 904
fgsl_sf_bessel_yc1_e, 843
fgsl_sf_bessel_ycn, 905
fgsl_sf_bessel_ycn_array, 905
fgsl_sf_bessel_ycn_e, 843
fgsl_sf_bessel_ynu, 905
fgsl_sf_bessel_ynu_e, 844
fgsl_sf_bessel_ys0, 905
fgsl_sf_bessel_ys0_e, 844
fgsl_sf_bessel_ys1, 905
fgsl_sf_bessel_ys1_e, 844
fgsl_sf_bessel_ys2, 905
fgsl_sf_bessel_ys2_e, 844
fgsl_sf_bessel_ysl, 906
fgsl_sf_bessel_ysl_array, 906
fgsl_sf_bessel_ysl_e, 844
fgsl_sf_bessel_zero_jc0, 906
fgsl_sf_bessel_zero_jc0_e, 844
fgsl_sf_bessel_zero_jc1, 906
fgsl_sf_bessel_zero_jc1_e, 845
fgsl_sf_bessel_zero_jnu, 906
fgsl_sf_bessel_zero_jnu_e, 845
fgsl_sf_beta, 906
fgsl_sf_beta_e, 845

fgsl_sf_beta_inc, 907
 fgsl_sf_beta_inc_e, 845
 fgsl_sf_chi, 907
 fgsl_sf_chi_e, 845
 fgsl_sf_choose, 907
 fgsl_sf_choose_e, 845
 fgsl_sf_ci, 907
 fgsl_sf_ci_e, 846
 fgsl_sf_clausen, 907
 fgsl_sf_clausen_e, 846
 fgsl_sf_complex_cos_e, 846
 fgsl_sf_complex_dilog_e, 846
 fgsl_sf_complex_log_e, 846
 fgsl_sf_complex_logsin_e, 847
 fgsl_sf_complex_sin_e, 847
 fgsl_sf_conicalp_0, 907
 fgsl_sf_conicalp_0_e, 847
 fgsl_sf_conicalp_1, 908
 fgsl_sf_conicalp_1_e, 847
 fgsl_sf_conicalp_cyl_reg, 908
 fgsl_sf_conicalp_cyl_reg_e, 847
 fgsl_sf_conicalp_half, 908
 fgsl_sf_conicalp_half_e, 848
 fgsl_sf_conicalp_mhalf, 908
 fgsl_sf_conicalp_mhalf_e, 848
 fgsl_sf_conicalp_sph_reg, 908
 fgsl_sf_conicalp_sph_reg_e, 848
 fgsl_sf_cos_err_e, 848
 fgsl_sf_coulomb_cl_array, 848
 fgsl_sf_coulomb_cl_e, 849
 fgsl_sf_coulomb_wave_f_array, 849
 fgsl_sf_coulomb_wave_fg_array, 849
 fgsl_sf_coulomb_wave_fg_e, 849
 fgsl_sf_coulomb_wave_fg_array, 849
 fgsl_sf_coulomb_wave_sphf_array, 850
 fgsl_sf_coupling_3j, 908
 fgsl_sf_coupling_3j_e, 850
 fgsl_sf_coupling_6j, 909
 fgsl_sf_coupling_6j_e, 850
 fgsl_sf_coupling_9j, 909
 fgsl_sf_coupling_9j_e, 850
 fgsl_sf_dawson, 909
 fgsl_sf_dawson_e, 851
 fgsl_sf_debye_1, 909
 fgsl_sf_debye_1_e, 851
 fgsl_sf_debye_2, 909
 fgsl_sf_debye_2_e, 851
 fgsl_sf_debye_3, 910
 fgsl_sf_debye_3_e, 851
 fgsl_sf_debye_4, 910
 fgsl_sf_debye_4_e, 851
 fgsl_sf_debye_5, 910
 fgsl_sf_debye_5_e, 852
 fgsl_sf_debye_6, 910
 fgsl_sf_debye_6_e, 852
 fgsl_sf_dilog, 910
 fgsl_sf_dilog_e, 852
 fgsl_sf_doublefact, 910
 fgsl_sf_doublefact_e, 852
 fgsl_sf_ellint_d, 852
 fgsl_sf_ellint_d_e, 852
 fgsl_sf_ellint_e, 853
 fgsl_sf_ellint_e_e, 853
 fgsl_sf_ellint_ecomp, 853
 fgsl_sf_ellint_ecomp_e, 853
 fgsl_sf_ellint_f, 853
 fgsl_sf_ellint_f_e, 854
 fgsl_sf_ellint_kcomp, 854
 fgsl_sf_ellint_kcomp_e, 854
 fgsl_sf_ellint_p, 854
 fgsl_sf_ellint_p_e, 854
 fgsl_sf_ellint_pcomp, 855
 fgsl_sf_ellint_pcomp_e, 855
 fgsl_sf_ellint_rc, 855
 fgsl_sf_ellint_rc_e, 855
 fgsl_sf_ellint_rd, 855
 fgsl_sf_ellint_rd_e, 856
 fgsl_sf_ellint_rf, 856
 fgsl_sf_ellint_rf_e, 856
 fgsl_sf_ellint_rj, 856
 fgsl_sf_ellint_rj_e, 856
 fgsl_sf_elljac_e, 910
 fgsl_sf_erf, 911
 fgsl_sf_erf_e, 857
 fgsl_sf_erf_q, 911
 fgsl_sf_erf_q_e, 857
 fgsl_sf_erf_z, 911
 fgsl_sf_erf_z_e, 857
 fgsl_sf_erfc, 911
 fgsl_sf_erfc_e, 857
 fgsl_sf_eta, 911
 fgsl_sf_eta_e, 857
 fgsl_sf_eta_int, 911
 fgsl_sf_eta_int_e, 857
 fgsl_sf_exp, 912
 fgsl_sf_exp_e, 858
 fgsl_sf_exp_e10_e, 858
 fgsl_sf_exp_err_e, 858
 fgsl_sf_exp_err_e10_e, 858
 fgsl_sf_exp_mult, 912
 fgsl_sf_exp_mult_e, 858
 fgsl_sf_exp_mult_e10_e, 858
 fgsl_sf_exp_mult_err_e, 859
 fgsl_sf_exp_mult_err_e10_e, 859
 fgsl_sf_expint_3, 912
 fgsl_sf_expint_3_e, 859
 fgsl_sf_expint_e1, 912
 fgsl_sf_expint_e1_e, 859
 fgsl_sf_expint_e2, 912
 fgsl_sf_expint_e2_e, 859
 fgsl_sf_expint_ei, 912
 fgsl_sf_expint_ei_e, 860
 fgsl_sf_expint_en, 912
 fgsl_sf_expint_en_e, 860
 fgsl_sf_expm1, 913
 fgsl_sf_expm1_e, 860

fgsl_sf_exprel, 913
 fgsl_sf_exprel_2, 913
 fgsl_sf_exprel_2_e, 860
 fgsl_sf_exprel_e, 860
 fgsl_sf_exprel_n, 913
 fgsl_sf_exprel_n_e, 860
 fgsl_sf_fact, 913
 fgsl_sf_fact_e, 861
 fgsl_sf_fermi_dirac_0, 913
 fgsl_sf_fermi_dirac_0_e, 861
 fgsl_sf_fermi_dirac_1, 913
 fgsl_sf_fermi_dirac_1_e, 861
 fgsl_sf_fermi_dirac_2, 914
 fgsl_sf_fermi_dirac_2_e, 861
 fgsl_sf_fermi_dirac_3half, 914
 fgsl_sf_fermi_dirac_3half_e, 861
 fgsl_sf_fermi_dirac_half, 914
 fgsl_sf_fermi_dirac_half_e, 861
 fgsl_sf_fermi_dirac_inc_0, 914
 fgsl_sf_fermi_dirac_inc_0_e, 862
 fgsl_sf_fermi_dirac_int, 914
 fgsl_sf_fermi_dirac_int_e, 862
 fgsl_sf_fermi_dirac_m1, 914
 fgsl_sf_fermi_dirac_m1_e, 862
 fgsl_sf_fermi_dirac_mhalf, 914
 fgsl_sf_fermi_dirac_mhalf_e, 862
 fgsl_sf_gamma, 915
 fgsl_sf_gamma_e, 862
 fgsl_sf_gamma_inc, 915
 fgsl_sf_gamma_inc_e, 862
 fgsl_sf_gamma_inc_p, 915
 fgsl_sf_gamma_inc_p_e, 863
 fgsl_sf_gamma_inc_q, 915
 fgsl_sf_gamma_inc_q_e, 863
 fgsl_sf_gammainv, 915
 fgsl_sf_gammainv_e, 863
 fgsl_sf_gammastar, 915
 fgsl_sf_gammastar_e, 863
 fgsl_sf_gegenpoly_1, 916
 fgsl_sf_gegenpoly_1_e, 863
 fgsl_sf_gegenpoly_2, 916
 fgsl_sf_gegenpoly_2_e, 863
 fgsl_sf_gegenpoly_3, 916
 fgsl_sf_gegenpoly_3_e, 864
 fgsl_sf_gegenpoly_array, 864
 fgsl_sf_gegenpoly_n, 916
 fgsl_sf_gegenpoly_n_e, 864
 fgsl_sf_hazard, 916
 fgsl_sf_hazard_e, 864
 fgsl_sf_hermite, 916
 fgsl_sf_hermite_array, 917
 fgsl_sf_hermite_array_deriv, 917
 fgsl_sf_hermite_deriv, 917
 fgsl_sf_hermite_deriv_array, 917
 fgsl_sf_hermite_deriv_e, 864
 fgsl_sf_hermite_e, 865
 fgsl_sf_hermite_func, 917
 fgsl_sf_hermite_func_array, 918
 fgsl_sf_hermite_func_e, 865
 fgsl_sf_hermite_func_fast, 918
 fgsl_sf_hermite_func_fast_e, 865
 fgsl_sf_hermite_func_series, 918
 fgsl_sf_hermite_func_series_e, 865
 fgsl_sf_hermite_phys, 918
 fgsl_sf_hermite_phys_array, 918
 fgsl_sf_hermite_phys_e, 865
 fgsl_sf_hermite_phys_series, 918
 fgsl_sf_hermite_phys_series_e, 866
 fgsl_sf_hermite_prob, 919
 fgsl_sf_hermite_prob_array, 919
 fgsl_sf_hermite_prob_array_deriv, 919
 fgsl_sf_hermite_prob_deriv, 919
 fgsl_sf_hermite_prob_deriv_array, 919
 fgsl_sf_hermite_prob_deriv_e, 866
 fgsl_sf_hermite_prob_e, 866
 fgsl_sf_hermite_prob_series, 920
 fgsl_sf_hermite_prob_series_e, 866
 fgsl_sf_hermite_prob_zero, 920
 fgsl_sf_hermite_prob_zero_e, 866
 fgsl_sf_hermite_series, 920
 fgsl_sf_hermite_series_e, 867
 fgsl_sf_hermite_zero, 920
 fgsl_sf_hermite_zero_e, 867
 fgsl_sf_hydrogenic, 920
 fgsl_sf_hydrogenic_1, 920
 fgsl_sf_hydrogenic_1_e, 867
 fgsl_sf_hydrogenic_e, 867
 fgsl_sf_hyperg_0f1, 921
 fgsl_sf_hyperg_0f1_e, 867
 fgsl_sf_hyperg_1f1, 921
 fgsl_sf_hyperg_1f1_e, 868
 fgsl_sf_hyperg_1f1_int, 921
 fgsl_sf_hyperg_1f1_int_e, 868
 fgsl_sf_hyperg_2f0, 921
 fgsl_sf_hyperg_2f0_e, 868
 fgsl_sf_hyperg_2f1, 921
 fgsl_sf_hyperg_2f1_conj, 921
 fgsl_sf_hyperg_2f1_conj_e, 868
 fgsl_sf_hyperg_2f1_conj_renorm, 922
 fgsl_sf_hyperg_2f1_conj_renorm_e, 868
 fgsl_sf_hyperg_2f1_e, 869
 fgsl_sf_hyperg_2f1_renorm, 922
 fgsl_sf_hyperg_2f1_renorm_e, 869
 fgsl_sf_hyperg_u, 922
 fgsl_sf_hyperg_u_e, 869
 fgsl_sf_hyperg_u_e10_e, 869
 fgsl_sf_hyperg_u_int, 922
 fgsl_sf_hyperg_u_int_e, 869
 fgsl_sf_hyperg_u_int_e10_e, 870
 fgsl_sf_hypot, 922
 fgsl_sf_hypot_e, 870
 fgsl_sf_hzeta, 923
 fgsl_sf_hzeta_e, 870
 fgsl_sf_laguerre_1, 923
 fgsl_sf_laguerre_1_e, 870
 fgsl_sf_laguerre_2, 923

fgsl_sf_laguerre_2_e, 870
 fgsl_sf_laguerre_3, 923
 fgsl_sf_laguerre_3_e, 871
 fgsl_sf_laguerre_n, 923
 fgsl_sf_laguerre_n_e, 871
 fgsl_sf_lambert_w0, 923
 fgsl_sf_lambert_w0_e, 871
 fgsl_sf_lambert_wm1, 924
 fgsl_sf_lambert_wm1_e, 871
 fgsl_sf_legendre_array, 871
 fgsl_sf_legendre_array_e, 871
 fgsl_sf_legendre_array_index, 924
 fgsl_sf_legendre_array_n, 924
 fgsl_sf_legendre_deriv2_alt_array, 872
 fgsl_sf_legendre_deriv2_alt_array_e, 872
 fgsl_sf_legendre_deriv2_array, 872
 fgsl_sf_legendre_deriv2_array_e, 872
 fgsl_sf_legendre_deriv_alt_array, 873
 fgsl_sf_legendre_deriv_alt_array_e, 873
 fgsl_sf_legendre_deriv_array, 873
 fgsl_sf_legendre_deriv_array_e, 873
 fgsl_sf_legendre_h3d, 924
 fgsl_sf_legendre_h3d_0, 924
 fgsl_sf_legendre_h3d_0_e, 874
 fgsl_sf_legendre_h3d_1, 924
 fgsl_sf_legendre_h3d_1_e, 874
 fgsl_sf_legendre_h3d_array, 874
 fgsl_sf_legendre_h3d_e, 874
 fgsl_sf_legendre_nlm, 925
 fgsl_sf_legendre_p1, 925
 fgsl_sf_legendre_p1_e, 874
 fgsl_sf_legendre_p2, 925
 fgsl_sf_legendre_p2_e, 875
 fgsl_sf_legendre_p3, 925
 fgsl_sf_legendre_p3_e, 875
 fgsl_sf_legendre_pl, 925
 fgsl_sf_legendre_pl_array, 875
 fgsl_sf_legendre_pl_deriv_array, 875
 fgsl_sf_legendre_pl_e, 875
 fgsl_sf_legendre_plm, 925
 fgsl_sf_legendre_plm_e, 875
 fgsl_sf_legendre_q0, 926
 fgsl_sf_legendre_q0_e, 876
 fgsl_sf_legendre_q1, 926
 fgsl_sf_legendre_q1_e, 876
 fgsl_sf_legendre_ql, 926
 fgsl_sf_legendre_ql_e, 876
 fgsl_sf_legendre_sphplm, 926
 fgsl_sf_legendre_sphplm_e, 876
 fgsl_sf_lnbeta, 926
 fgsl_sf_lnbeta_e, 876
 fgsl_sf_lnchoose, 926
 fgsl_sf_lnchoose_e, 876
 fgsl_sf_lncosh, 927
 fgsl_sf_lncosh_e, 877
 fgsl_sf_lndoublefact, 927
 fgsl_sf_lndoublefact_e, 877
 fgsl_sf_lnfact, 927
 fgsl_sf_lnfact_e, 877
 fgsl_sf_lngamma, 927
 fgsl_sf_lngamma_complex_e, 877
 fgsl_sf_lngamma_e, 877
 fgsl_sf_lngamma_sgn_e, 877
 fgsl_sf_lnpoch, 927
 fgsl_sf_lnpoch_e, 878
 fgsl_sf_lnpoch_sgn_e, 878
 fgsl_sf_lnsinh, 927
 fgsl_sf_lnsinh_e, 878
 fgsl_sf_log, 927
 fgsl_sf_log_1plusx, 928
 fgsl_sf_log_1plusx_e, 878
 fgsl_sf_log_1plusx_mx, 928
 fgsl_sf_log_1plusx_mx_e, 878
 fgsl_sf_log_abs, 928
 fgsl_sf_log_abs_e, 878
 fgsl_sf_log_e, 879
 fgsl_sf_log_erfc, 928
 fgsl_sf_log_erfc_e, 879
 fgsl_sf_mathieu_a, 928
 fgsl_sf_mathieu_a_array, 879
 fgsl_sf_mathieu_a_coeff, 928
 fgsl_sf_mathieu_a_e, 879
 fgsl_sf_mathieu_alloc, 879
 fgsl_sf_mathieu_b, 929
 fgsl_sf_mathieu_b_array, 879
 fgsl_sf_mathieu_b_coeff, 929
 fgsl_sf_mathieu_b_e, 880
 fgsl_sf_mathieu_ce, 929
 fgsl_sf_mathieu_ce_array, 880
 fgsl_sf_mathieu_ce_e, 880
 fgsl_sf_mathieu_free, 880
 fgsl_sf_mathieu_mc, 929
 fgsl_sf_mathieu_mc_array, 880
 fgsl_sf_mathieu_mc_e, 881
 fgsl_sf_mathieu_ms, 929
 fgsl_sf_mathieu_ms_array, 881
 fgsl_sf_mathieu_ms_e, 881
 fgsl_sf_mathieu_se, 930
 fgsl_sf_mathieu_se_array, 881
 fgsl_sf_mathieu_se_e, 882
 fgsl_sf_multiply_e, 882
 fgsl_sf_multiply_err_e, 882
 fgsl_sf_poch, 930
 fgsl_sf_poch_e, 882
 fgsl_sf_pochrel, 930
 fgsl_sf_pochrel_e, 882
 fgsl_sf_polar_to_rect, 883
 fgsl_sf_psi, 930
 fgsl_sf_psi_1, 930
 fgsl_sf_psi_1_e, 883
 fgsl_sf_psi_1_int, 930
 fgsl_sf_psi_1_int_e, 883
 fgsl_sf_psi_1_piy, 931
 fgsl_sf_psi_1_piy_e, 883
 fgsl_sf_psi_e, 883
 fgsl_sf_psi_int, 931

fgsl_sf_psi_int_e, 883
fgsl_sf_psi_n, 931
fgsl_sf_psi_n_e, 884
fgsl_sf_rect_to_polar, 884
fgsl_sf_shi, 931
fgsl_sf_shi_e, 884
fgsl_sf_si, 931
fgsl_sf_si_e, 884
fgsl_sf_sin_err_e, 884
fgsl_sf_sinc, 931
fgsl_sf_sinc_e, 884
fgsl_sf_synchrotron_1, 931
fgsl_sf_synchrotron_1_e, 885
fgsl_sf_synchrotron_2, 932
fgsl_sf_synchrotron_2_e, 885
fgsl_sf_taylorcoeff, 932
fgsl_sf_taylorcoeff_e, 885
fgsl_sf_transport_2, 932
fgsl_sf_transport_2_e, 885
fgsl_sf_transport_3, 932
fgsl_sf_transport_3_e, 885
fgsl_sf_transport_4, 932
fgsl_sf_transport_4_e, 885
fgsl_sf_transport_5, 932
fgsl_sf_transport_5_e, 886
fgsl_sf_zeta, 932
fgsl_sf_zeta_e, 886
fgsl_sf_zeta_int, 933
fgsl_sf_zeta_int_e, 886
fgsl_sf_zetam1, 933
fgsl_sf_zetam1_e, 886
fgsl_sf_zetam1_int, 933
fgsl_sf_zetam1_int_e, 886
gsl_sf_airy_ai, 933
gsl_sf_airy_ai_deriv, 933
gsl_sf_airy_ai_deriv_e, 933
gsl_sf_airy_ai_deriv_scaled, 934
gsl_sf_airy_ai_deriv_scaled_e, 934
gsl_sf_airy_ai_e, 934
gsl_sf_airy_ai_scaled, 934
gsl_sf_airy_ai_scaled_e, 934
gsl_sf_airy_bi, 934
gsl_sf_airy_bi_deriv, 935
gsl_sf_airy_bi_deriv_e, 935
gsl_sf_airy_bi_deriv_scaled, 935
gsl_sf_airy_bi_deriv_scaled_e, 935
gsl_sf_airy_bi_e, 935
gsl_sf_airy_bi_scaled, 935
gsl_sf_airy_bi_scaled_e, 936
gsl_sf_airy_zero_ai, 936
gsl_sf_airy_zero_ai_deriv, 936
gsl_sf_airy_zero_ai_deriv_e, 936
gsl_sf_airy_zero_ai_e, 936
gsl_sf_airy_zero_bi, 936
gsl_sf_airy_zero_bi_deriv, 937
gsl_sf_airy_zero_bi_deriv_e, 937
gsl_sf_airy_zero_bi_e, 937
gsl_sf_angle_restrict_pos_e, 937
gsl_sf_angle_restrict_symm_e, 937
gsl_sf_atanint_e, 937
gsl_sf_bessel_ic0_e, 938
gsl_sf_bessel_ic0_scaled_e, 938
gsl_sf_bessel_ic1_e, 938
gsl_sf_bessel_ic1_scaled_e, 938
gsl_sf_bessel_icn_e, 938
gsl_sf_bessel_icn_scaled_e, 938
gsl_sf_bessel_inu_e, 939
gsl_sf_bessel_inu_scaled_e, 939
gsl_sf_bessel_is0_scaled_e, 939
gsl_sf_bessel_is1_scaled_e, 939
gsl_sf_bessel_is2_scaled_e, 939
gsl_sf_bessel_isl_scaled_e, 939
gsl_sf_bessel_jc0_e, 940
gsl_sf_bessel_jc1_e, 940
gsl_sf_bessel_jcn_e, 940
gsl_sf_bessel_jnu_e, 940
gsl_sf_bessel_js0_e, 940
gsl_sf_bessel_js1_e, 940
gsl_sf_bessel_js2_e, 941
gsl_sf_bessel_jsl_e, 941
gsl_sf_bessel_kc0_e, 941
gsl_sf_bessel_kc0_scaled_e, 941
gsl_sf_bessel_kc1_e, 941
gsl_sf_bessel_kc1_scaled_e, 941
gsl_sf_bessel_kcn_e, 942
gsl_sf_bessel_kcn_scaled_e, 942
gsl_sf_bessel_knu_e, 942
gsl_sf_bessel_knu_scaled_e, 942
gsl_sf_bessel_ks0_scaled_e, 942
gsl_sf_bessel_ks1_scaled_e, 942
gsl_sf_bessel_ks2_scaled_e, 943
gsl_sf_bessel_ksl_scaled_e, 943
gsl_sf_bessel_lnkn_e, 943
gsl_sf_bessel_sequence_jnu_e, 943
gsl_sf_bessel_yc0_e, 943
gsl_sf_bessel_yc1_e, 943
gsl_sf_bessel_ycn_e, 944
gsl_sf_bessel_ynu_e, 944
gsl_sf_bessel_ys0_e, 944
gsl_sf_bessel_ys1_e, 944
gsl_sf_bessel_ys2_e, 944
gsl_sf_bessel_ysl_e, 944
gsl_sf_bessel_zero_jc0_e, 945
gsl_sf_bessel_zero_jc1_e, 945
gsl_sf_bessel_zero_jnu_e, 945
gsl_sf_beta_e, 945
gsl_sf_beta_inc_e, 945
gsl_sf_chi_e, 945
gsl_sf_choose_e, 946
gsl_sf_ci_e, 946
gsl_sf_clausen_e, 946
gsl_sf_complex_cos_e, 946
gsl_sf_complex_dilog_e, 946
gsl_sf_complex_log_e, 946
gsl_sf_complex_logsin_e, 947
gsl_sf_complex_sin_e, 947

gsl_sf_conicalp_0_e, 947
 gsl_sf_conicalp_1_e, 947
 gsl_sf_conicalp_cyl_reg_e, 947
 gsl_sf_conicalp_half_e, 948
 gsl_sf_conicalp_mhalf_e, 948
 gsl_sf_conicalp_sph_reg_e, 948
 gsl_sf_cos_err_e, 948
 gsl_sf_coulomb_cl_array, 948
 gsl_sf_coulomb_cl_e, 949
 gsl_sf_coulomb_wave_f_array, 949
 gsl_sf_coulomb_wave_fg_array, 949
 gsl_sf_coulomb_wave_fg_e, 949
 gsl_sf_coulomb_wave_fgp_array, 950
 gsl_sf_coulomb_wave_sphf_array, 950
 gsl_sf_coupling_3j_e, 950
 gsl_sf_coupling_6j_e, 950
 gsl_sf_coupling_9j_e, 951
 gsl_sf_dawson_e, 951
 gsl_sf_debye_1_e, 951
 gsl_sf_debye_2_e, 951
 gsl_sf_debye_3_e, 951
 gsl_sf_debye_4_e, 952
 gsl_sf_debye_5_e, 952
 gsl_sf_debye_6_e, 952
 gsl_sf_dilog_e, 952
 gsl_sf_doublefact_e, 952
 gsl_sf_ellint_d, 952
 gsl_sf_ellint_d_e, 953
 gsl_sf_ellint_e, 953
 gsl_sf_ellint_e_e, 953
 gsl_sf_ellint_ecomp, 953
 gsl_sf_ellint_ecomp_e, 953
 gsl_sf_ellint_f, 954
 gsl_sf_ellint_f_e, 954
 gsl_sf_ellint_kcomp, 954
 gsl_sf_ellint_kcomp_e, 954
 gsl_sf_ellint_p, 954
 gsl_sf_ellint_p_e, 955
 gsl_sf_ellint_pcomp, 955
 gsl_sf_ellint_pcomp_e, 955
 gsl_sf_ellint_rc, 955
 gsl_sf_ellint_rc_e, 955
 gsl_sf_ellint_rd, 956
 gsl_sf_ellint_rd_e, 956
 gsl_sf_ellint_rf, 956
 gsl_sf_ellint_rf_e, 956
 gsl_sf_ellint_rj, 956
 gsl_sf_ellint_rj_e, 957
 gsl_sf_erf_e, 957
 gsl_sf_erf_q_e, 957
 gsl_sf_erf_z_e, 957
 gsl_sf_erfc_e, 957
 gsl_sf_eta_e, 958
 gsl_sf_eta_int_e, 958
 gsl_sf_exp_e, 958
 gsl_sf_exp_e10_e, 958
 gsl_sf_exp_err_e, 958
 gsl_sf_exp_err_e10_e, 958
 gsl_sf_exp_mult_e, 959
 gsl_sf_exp_mult_e10_e, 959
 gsl_sf_exp_mult_err_e, 959
 gsl_sf_exp_mult_err_e10_e, 959
 gsl_sf_expint_3_e, 959
 gsl_sf_expint_e1_e, 960
 gsl_sf_expint_e2_e, 960
 gsl_sf_expint_ei_e, 960
 gsl_sf_expint_en_e, 960
 gsl_sf_expm1_e, 960
 gsl_sf_exprel_2_e, 960
 gsl_sf_exprel_e, 961
 gsl_sf_exprel_n_e, 961
 gsl_sf_fact_e, 961
 gsl_sf_fermi_dirac_0_e, 961
 gsl_sf_fermi_dirac_1_e, 961
 gsl_sf_fermi_dirac_2_e, 961
 gsl_sf_fermi_dirac_3half_e, 962
 gsl_sf_fermi_dirac_half_e, 962
 gsl_sf_fermi_dirac_inc_0_e, 962
 gsl_sf_fermi_dirac_int_e, 962
 gsl_sf_fermi_dirac_m1_e, 962
 gsl_sf_fermi_dirac_mhalf_e, 962
 gsl_sf_gamma_e, 963
 gsl_sf_gamma_inc_e, 963
 gsl_sf_gamma_inc_p_e, 963
 gsl_sf_gamma_inc_q_e, 963
 gsl_sf_gammainv_e, 963
 gsl_sf_gammastar_e, 963
 gsl_sf_gegenpoly_1_e, 964
 gsl_sf_gegenpoly_2_e, 964
 gsl_sf_gegenpoly_3_e, 964
 gsl_sf_gegenpoly_array, 964
 gsl_sf_gegenpoly_n_e, 964
 gsl_sf_hazard_e, 965
 gsl_sf_hermite_deriv_e, 965
 gsl_sf_hermite_e, 965
 gsl_sf_hermite_func_e, 965
 gsl_sf_hermite_func_fast_e, 965
 gsl_sf_hermite_func_series_e, 966
 gsl_sf_hermite_phys_e, 966
 gsl_sf_hermite_phys_series_e, 966
 gsl_sf_hermite_prob_deriv_e, 966
 gsl_sf_hermite_prob_e, 966
 gsl_sf_hermite_prob_series_e, 967
 gsl_sf_hermite_prob_zero_e, 967
 gsl_sf_hermite_series_e, 967
 gsl_sf_hermite_zero_e, 967
 gsl_sf_hydrogenic_1_e, 967
 gsl_sf_hydrogenic_e, 968
 gsl_sf_hyperg_0f1_e, 968
 gsl_sf_hyperg_1f1_e, 968
 gsl_sf_hyperg_1f1_int_e, 968
 gsl_sf_hyperg_2f0_e, 968
 gsl_sf_hyperg_2f1_conj_e, 969
 gsl_sf_hyperg_2f1_conj_renorm_e, 969
 gsl_sf_hyperg_2f1_e, 969
 gsl_sf_hyperg_2f1_renorm_e, 969

- [gsl_sf_hyperg_u_e](#), 969
- [gsl_sf_hyperg_u_e10_e](#), 970
- [gsl_sf_hyperg_u_int_e](#), 970
- [gsl_sf_hyperg_u_int_e10_e](#), 970
- [gsl_sf_hypot_e](#), 970
- [gsl_sf_hzeta_e](#), 970
- [gsl_sf_laguerre_1_e](#), 971
- [gsl_sf_laguerre_2_e](#), 971
- [gsl_sf_laguerre_3_e](#), 971
- [gsl_sf_laguerre_n_e](#), 971
- [gsl_sf_lambert_w0_e](#), 971
- [gsl_sf_lambert_wm1_e](#), 972
- [gsl_sf_legendre_array](#), 972
- [gsl_sf_legendre_array_e](#), 972
- [gsl_sf_legendre_deriv2_alt_array](#), 972
- [gsl_sf_legendre_deriv2_alt_array_e](#), 972
- [gsl_sf_legendre_deriv2_array](#), 973
- [gsl_sf_legendre_deriv2_array_e](#), 973
- [gsl_sf_legendre_deriv_alt_array](#), 973
- [gsl_sf_legendre_deriv_alt_array_e](#), 973
- [gsl_sf_legendre_deriv_array](#), 974
- [gsl_sf_legendre_deriv_array_e](#), 974
- [gsl_sf_legendre_h3d_0_e](#), 974
- [gsl_sf_legendre_h3d_1_e](#), 974
- [gsl_sf_legendre_h3d_array](#), 974
- [gsl_sf_legendre_h3d_e](#), 975
- [gsl_sf_legendre_p1_e](#), 975
- [gsl_sf_legendre_p2_e](#), 975
- [gsl_sf_legendre_p3_e](#), 975
- [gsl_sf_legendre_pl_array](#), 975
- [gsl_sf_legendre_pl_deriv_array](#), 975
- [gsl_sf_legendre_pl_e](#), 976
- [gsl_sf_legendre_plm_e](#), 976
- [gsl_sf_legendre_q0_e](#), 976
- [gsl_sf_legendre_q1_e](#), 976
- [gsl_sf_legendre_ql_e](#), 976
- [gsl_sf_legendre_sphplm_e](#), 976
- [gsl_sf_lnbeta_e](#), 977
- [gsl_sf_lnchoose_e](#), 977
- [gsl_sf_lncosh_e](#), 977
- [gsl_sf_lndoublefact_e](#), 977
- [gsl_sf_lnfact_e](#), 977
- [gsl_sf_lngamma_complex_e](#), 977
- [gsl_sf_lngamma_e](#), 978
- [gsl_sf_lngamma_sgn_e](#), 978
- [gsl_sf_lnpoch_e](#), 978
- [gsl_sf_lnpoch_sgn_e](#), 978
- [gsl_sf_lnsinh_e](#), 978
- [gsl_sf_log_1plusx_e](#), 979
- [gsl_sf_log_1plusx_mx_e](#), 979
- [gsl_sf_log_abs_e](#), 979
- [gsl_sf_log_e](#), 979
- [gsl_sf_log_erfc_e](#), 979
- [gsl_sf_mathieu_a_array](#), 979
- [gsl_sf_mathieu_a_e](#), 980
- [gsl_sf_mathieu_alloc](#), 980
- [gsl_sf_mathieu_b_array](#), 980
- [gsl_sf_mathieu_b_e](#), 980
- [gsl_sf_mathieu_ce_array](#), 980
- [gsl_sf_mathieu_ce_e](#), 981
- [gsl_sf_mathieu_free](#), 981
- [gsl_sf_mathieu_mc_array](#), 981
- [gsl_sf_mathieu_mc_e](#), 981
- [gsl_sf_mathieu_ms_array](#), 981
- [gsl_sf_mathieu_ms_e](#), 982
- [gsl_sf_mathieu_se_array](#), 982
- [gsl_sf_mathieu_se_e](#), 982
- [gsl_sf_multiply_e](#), 982
- [gsl_sf_multiply_err_e](#), 982
- [gsl_sf_poch_e](#), 983
- [gsl_sf_pochrel_e](#), 983
- [gsl_sf_polar_to_rect](#), 983
- [gsl_sf_psi_1_e](#), 983
- [gsl_sf_psi_1_int_e](#), 983
- [gsl_sf_psi_1piy_e](#), 984
- [gsl_sf_psi_e](#), 984
- [gsl_sf_psi_int_e](#), 984
- [gsl_sf_psi_n_e](#), 984
- [gsl_sf_rect_to_polar](#), 984
- [gsl_sf_shi_e](#), 984
- [gsl_sf_si_e](#), 985
- [gsl_sf_sin_err_e](#), 985
- [gsl_sf_sinc_e](#), 985
- [gsl_sf_synchrotron_1_e](#), 985
- [gsl_sf_synchrotron_2_e](#), 985
- [gsl_sf_taylorcoeff_e](#), 985
- [gsl_sf_to_fgsl_sf](#), 886
- [gsl_sf_transport_2_e](#), 986
- [gsl_sf_transport_3_e](#), 986
- [gsl_sf_transport_4_e](#), 986
- [gsl_sf_transport_5_e](#), 986
- [gsl_sf_zeta_e](#), 986
- [gsl_sf_zeta_int_e](#), 986
- [gsl_sf_zetam1_e](#), 987
- [gsl_sf_zetam1_int_e](#), 987
- [gsl_sfe10_to_fgsl_sfe10](#), 887
- [splinalg.finc](#)
 - [fgsl_aux_splinalg_itsolve_alloc](#), 989
 - [fgsl_splinalg_itsolve_alloc](#), 987
 - [fgsl_splinalg_itsolve_free](#), 987
 - [fgsl_splinalg_itsolve_iterate](#), 988
 - [fgsl_splinalg_itsolve_name](#), 988
 - [fgsl_splinalg_itsolve_normr](#), 988
 - [gsl_splinalg_itsolve_alloc](#), 989
 - [gsl_splinalg_itsolve_free](#), 989
 - [gsl_splinalg_itsolve_iterate](#), 989
 - [gsl_splinalg_itsolve_name](#), 989
 - [gsl_splinalg_itsolve_normr](#), 990
- [spmatrix.finc](#)
 - [fgsl_spblas_dgemm](#), 991
 - [fgsl_spblas_dgemv](#), 991
 - [fgsl_spmatrix_add](#), 991
 - [fgsl_spmatrix_add_to_dense](#), 991
 - [fgsl_spmatrix_alloc](#), 991
 - [fgsl_spmatrix_alloc_nzmax](#), 991
 - [fgsl_spmatrix_compcol](#), 992

- fgsl_spmatrix_compress, 992
- fgsl_spmatrix_csc, 992
- fgsl_spmatrix_csr, 992
- fgsl_spmatrix_cumsum, 992
- fgsl_spmatrix_d2sp, 992
- fgsl_spmatrix_dense_add, 993
- fgsl_spmatrix_dense_sub, 993
- fgsl_spmatrix_equal, 993
- fgsl_spmatrix_fprintf, 993
- fgsl_spmatrix_fread, 993
- fgsl_spmatrix_free, 993
- fgsl_spmatrix_fscanf, 994
- fgsl_spmatrix_fwrite, 994
- fgsl_spmatrix_get, 994
- fgsl_spmatrix_getfields, 994
- fgsl_spmatrix_memcpy, 994
- fgsl_spmatrix_min_index, 994
- fgsl_spmatrix_minmax, 995
- fgsl_spmatrix_nnz, 995
- fgsl_spmatrix_norm1, 995
- fgsl_spmatrix_realloc, 995
- fgsl_spmatrix_scale, 995
- fgsl_spmatrix_scale_columns, 995
- fgsl_spmatrix_scale_rows, 996
- fgsl_spmatrix_set, 996
- fgsl_spmatrix_set_zero, 996
- fgsl_spmatrix_size, 996
- fgsl_spmatrix_sp2d, 996
- fgsl_spmatrix_transpose, 996
- fgsl_spmatrix_transpose_memcpy, 997
- gsl_aux_spmatrix_getfields, 998
- gsl_splblas_dgemm, 998
- gsl_splblas_dgemv, 998
- gsl_spmatrix_add, 999
- gsl_spmatrix_alloc, 999
- gsl_spmatrix_alloc_nzmax, 999
- gsl_spmatrix_compcol, 999
- gsl_spmatrix_compress, 999
- gsl_spmatrix_csc, 1000
- gsl_spmatrix_csr, 1000
- gsl_spmatrix_cumsum, 1000
- gsl_spmatrix_d2sp, 1000
- gsl_spmatrix_dense_add, 1000
- gsl_spmatrix_dense_sub, 1000
- gsl_spmatrix_equal, 1001
- gsl_spmatrix_fprintf, 1001
- gsl_spmatrix_fread, 1001
- gsl_spmatrix_free, 1001
- gsl_spmatrix_fscanf, 1001
- gsl_spmatrix_fwrite, 1001
- gsl_spmatrix_get, 1002
- gsl_spmatrix_memcpy, 1002
- gsl_spmatrix_min_index, 1002
- gsl_spmatrix_minmax, 1002
- gsl_spmatrix_nnz, 1002
- gsl_spmatrix_norm1, 1002
- gsl_spmatrix_realloc, 1003
- gsl_spmatrix_scale, 1003
- gsl_spmatrix_scale_columns, 1003
- gsl_spmatrix_scale_rows, 1003
- gsl_spmatrix_set, 1003
- gsl_spmatrix_set_zero, 1003
- gsl_spmatrix_size, 1004
- gsl_spmatrix_sp2d, 1004
- gsl_spmatrix_transpose, 1004
- gsl_spmatrix_transpose_memcpy, 1004
- sse
 - fgsl::fgsl_multifit_robust_stats, 220
- statistics.finc
 - fgsl_stats_absdev, 1005
 - fgsl_stats_absdev_m, 1006
 - fgsl_stats_correlation, 1006
 - fgsl_stats_covariance, 1006
 - fgsl_stats_covariance_m, 1006
 - fgsl_stats_gastwirth_from_sorted_data, 1015
 - fgsl_stats_kurtosis, 1006
 - fgsl_stats_kurtosis_m_sd, 1007
 - fgsl_stats_lag1_autocorrelation, 1007
 - fgsl_stats_lag1_autocorrelation_m, 1007
 - fgsl_stats_mad, 1015
 - fgsl_stats_mad0, 1016
 - fgsl_stats_max, 1007
 - fgsl_stats_max_index, 1007
 - fgsl_stats_mean, 1008
 - fgsl_stats_median, 1016
 - fgsl_stats_median_from_sorted_data, 1008
 - fgsl_stats_min, 1008
 - fgsl_stats_min_index, 1008
 - fgsl_stats_minmax, 1008
 - fgsl_stats_minmax_index, 1009
 - fgsl_stats_qn0_from_sorted_data, 1016
 - fgsl_stats_qn_from_sorted_data, 1016
 - fgsl_stats_quantile_from_sorted_data, 1009
 - fgsl_stats_sd, 1009
 - fgsl_stats_sd_m, 1009
 - fgsl_stats_sd_with_fixed_mean, 1009
 - fgsl_stats_select, 1016
 - fgsl_stats_skew, 1010
 - fgsl_stats_skew_m_sd, 1010
 - fgsl_stats_sn0_from_sorted_data, 1017
 - fgsl_stats_sn_from_sorted_data, 1017
 - fgsl_stats_spearman, 1010
 - fgsl_stats_tmean_from_sorted_data, 1017
 - fgsl_stats_variance, 1010
 - fgsl_stats_variance_m, 1010
 - fgsl_stats_variance_with_fixed_mean, 1011
 - fgsl_stats_wabsdev, 1011
 - fgsl_stats_wabsdev_m, 1011
 - fgsl_stats_wkurtosis, 1011
 - fgsl_stats_wkurtosis_m_sd, 1011
 - fgsl_stats_wmean, 1012
 - fgsl_stats_wsd, 1012
 - fgsl_stats_wsd_m, 1012
 - fgsl_stats_wsd_with_fixed_mean, 1012
 - fgsl_stats_wskew, 1013
 - fgsl_stats_wskew_m_sd, 1013

- fgsl_stats_wvariance, [1013](#)
- fgsl_stats_wvariance_m, [1013](#)
- fgsl_stats_wvariance_with_fixed_mean, [1014](#)
- gsl_stats_absdev, [1017](#)
- gsl_stats_absdev_m, [1017](#)
- gsl_stats_correlation, [1018](#)
- gsl_stats_covariance, [1018](#)
- gsl_stats_covariance_m, [1018](#)
- gsl_stats_kurtosis, [1018](#)
- gsl_stats_kurtosis_m_sd, [1018](#)
- gsl_stats_lag1_autocorrelation, [1019](#)
- gsl_stats_lag1_autocorrelation_m, [1019](#)
- gsl_stats_max, [1019](#)
- gsl_stats_max_index, [1019](#)
- gsl_stats_mean, [1019](#)
- gsl_stats_median_from_sorted_data, [1020](#)
- gsl_stats_min, [1020](#)
- gsl_stats_min_index, [1020](#)
- gsl_stats_minmax, [1020](#)
- gsl_stats_minmax_index, [1020](#)
- gsl_stats_quantile_from_sorted_data, [1021](#)
- gsl_stats_sd, [1021](#)
- gsl_stats_sd_m, [1021](#)
- gsl_stats_sd_with_fixed_mean, [1021](#)
- gsl_stats_skew, [1021](#)
- gsl_stats_skew_m_sd, [1022](#)
- gsl_stats_spearman, [1022](#)
- gsl_stats_variance, [1022](#)
- gsl_stats_variance_m, [1022](#)
- gsl_stats_variance_with_fixed_mean, [1022](#)
- gsl_stats_wabsdev, [1023](#)
- gsl_stats_wabsdev_m, [1023](#)
- gsl_stats_wkurtosis, [1023](#)
- gsl_stats_wkurtosis_m_sd, [1023](#)
- gsl_stats_wmean, [1023](#)
- gsl_stats_wsd, [1024](#)
- gsl_stats_wsd_m, [1024](#)
- gsl_stats_wsd_with_fixed_mean, [1024](#)
- gsl_stats_wskew, [1024](#)
- gsl_stats_wskew_m_sd, [1024](#)
- gsl_stats_wvariance, [1025](#)
- gsl_stats_wvariance_m, [1025](#)
- gsl_stats_wvariance_with_fixed_mean, [1025](#)
- sum_levin.finc
 - fgsl_sum_levin_u_accel, [1026](#)
 - fgsl_sum_levin_u_alloc, [1026](#)
 - fgsl_sum_levin_u_free, [1026](#)
 - fgsl_sum_levin_utrunc_accel, [1026](#)
 - fgsl_sum_levin_utrunc_alloc, [1026](#)
 - fgsl_sum_levin_utrunc_free, [1026](#)
 - gsl_sum_levin_u_accel, [1027](#)
 - gsl_sum_levin_u_alloc, [1027](#)
 - gsl_sum_levin_u_free, [1028](#)
 - gsl_sum_levin_utrunc_accel, [1028](#)
 - gsl_sum_levin_utrunc_alloc, [1028](#)
 - gsl_sum_levin_utrunc_free, [1028](#)
- type
 - fgsl::fgsl_qrng_type, [241](#)
- fgsl::fgsl_rng_type, [243](#)
- val
 - fgsl::fgsl_sf_result, [247](#)
 - fgsl::fgsl_sf_result_e10, [248](#)
 - fgsl::gsl_sf_result, [275](#)
 - fgsl::gsl_sf_result_e10, [275](#)
- wavelet.finc
 - fgsl_aux_wavelet_alloc, [1035](#)
 - fgsl_sizeof_wavelet, [1029](#)
 - fgsl_sizeof_wavelet_workspace, [1029](#)
 - fgsl_wavelet2d_nstransform, [1029](#)
 - fgsl_wavelet2d_nstransform_forward, [1030](#)
 - fgsl_wavelet2d_nstransform_inverse, [1030](#)
 - fgsl_wavelet2d_nstransform_matrix, [1030](#)
 - fgsl_wavelet2d_nstransform_matrix_forward, [1030](#)
 - fgsl_wavelet2d_nstransform_matrix_inverse, [1030](#)
 - fgsl_wavelet2d_transform, [1031](#)
 - fgsl_wavelet2d_transform_forward, [1031](#)
 - fgsl_wavelet2d_transform_inverse, [1031](#)
 - fgsl_wavelet2d_transform_matrix, [1031](#)
 - fgsl_wavelet2d_transform_matrix_forward, [1031](#)
 - fgsl_wavelet2d_transform_matrix_inverse, [1032](#)
 - fgsl_wavelet_alloc, [1032](#)
 - fgsl_wavelet_free, [1032](#)
 - fgsl_wavelet_name, [1032](#)
 - fgsl_wavelet_status, [1032](#)
 - fgsl_wavelet_transform, [1032](#)
 - fgsl_wavelet_transform_forward, [1033](#)
 - fgsl_wavelet_transform_inverse, [1033](#)
 - fgsl_wavelet_workspace_alloc, [1033](#)
 - fgsl_wavelet_workspace_free, [1033](#)
 - fgsl_wavelet_workspace_status, [1033](#)
 - gsl_aux_sizeof_wavelet, [1035](#)
 - gsl_aux_sizeof_wavelet_workspace, [1035](#)
 - gsl_wavelet2d_nstransform, [1035](#)
 - gsl_wavelet2d_nstransform_forward, [1035](#)
 - gsl_wavelet2d_nstransform_inverse, [1035](#)
 - gsl_wavelet2d_nstransform_matrix, [1036](#)
 - gsl_wavelet2d_nstransform_matrix_forward, [1036](#)
 - gsl_wavelet2d_nstransform_matrix_inverse, [1036](#)
 - gsl_wavelet2d_transform, [1036](#)
 - gsl_wavelet2d_transform_forward, [1036](#)
 - gsl_wavelet2d_transform_inverse, [1037](#)
 - gsl_wavelet2d_transform_matrix, [1037](#)
 - gsl_wavelet2d_transform_matrix_forward, [1037](#)
 - gsl_wavelet2d_transform_matrix_inverse, [1037](#)
 - gsl_wavelet_alloc, [1037](#)
 - gsl_wavelet_free, [1038](#)
 - gsl_wavelet_name, [1038](#)
 - gsl_wavelet_transform, [1038](#)
 - gsl_wavelet_transform_forward, [1038](#)
 - gsl_wavelet_transform_inverse, [1038](#)
 - gsl_wavelet_workspace_alloc, [1039](#)
 - gsl_wavelet_workspace_free, [1039](#)
- weights
 - fgsl::fgsl_multifit_robust_stats, [221](#)
- which

`fgsl::fgsl_interp2d_type`, [202](#)
`fgsl::fgsl_interp_type`, [202](#)
`fgsl::fgsl_min_fminimizer_type`, [207](#)
`fgsl::fgsl_multifit_fdfsolver_type`, [214](#)
`fgsl::fgsl_multifit_fsolver_type`, [214](#)
`fgsl::fgsl_multifit_robust_type`, [221](#)
`fgsl::fgsl_multilarge_linear_type`, [222](#)
`fgsl::fgsl_multimin_fdfminimizer_type`, [226](#)
`fgsl::fgsl_multimin_fminimizer_type`, [226](#)
`fgsl::fgsl_multiroot_fdfsolver_type`, [228](#)
`fgsl::fgsl_multiroot_fsolver_type`, [229](#)
`fgsl::fgsl_odeiv2_step_type`, [235](#)
`fgsl::fgsl_odeiv_step_type`, [238](#)
`fgsl::fgsl_root_fdfsolver_type`, [244](#)
`fgsl::fgsl_root_fsolver_type`, [245](#)
`fgsl::fgsl_splinalg_itersolve_type`, [257](#)
`fgsl::fgsl_wavelet_type`, [265](#)