NAG Library Chapter Contents

D01 – Quadrature

D01 Chapter Introduction – a description of the Chapter and an overview of the algorithms available

Routine Name	Mark of Introduction	Purpose
D01AHF	8	nagf_quad_1d_fin_well One-dimensional quadrature, adaptive, finite interval, strategy due to Patterson, suitable for well-behaved integrands
D01AJF	8	nagf_quad_1d_fin_bad One-dimensional quadrature, adaptive, finite interval, strategy due to Piessens and de Doncker, allowing for badly behaved integrands
D01AKF	8	nagf_quad_1d_fin_osc One-dimensional quadrature, adaptive, finite interval, method suitable for oscillating functions
D01ALF	8	nagf_quad_1d_fin_sing One-dimensional quadrature, adaptive, finite interval, allowing for singularities at user-specified break-points
D01AMF	8	nagf_quad_1d_inf One-dimensional quadrature, adaptive, infinite or semi-infinite interval
D01ANF	8	nagf_quad_1d_fin_wtrig One-dimensional quadrature, adaptive, finite interval, weight function $\cos(\omega x)$ or $\sin(\omega x)$
D01APF	8	nagf_quad_1d_fin_wsing One-dimensional quadrature, adaptive, finite interval, weight function with end-point singularities of algebraico-logarithmic type
D01AQF	8	nagf_quad_1d_fin_wcauchy One-dimensional quadrature, adaptive, finite interval, weight function $1/(x-c)$, Cauchy principal value (Hilbert transform)
D01ARF	10	nagf_quad_1d_indef One-dimensional quadrature, non-adaptive, finite interval with provision for indefinite integrals
D01ASF	13	nagf_quad_1d_inf_wtrig One-dimensional quadrature, adaptive, semi-infinite interval, weight function $\cos(\omega x)$ or $\sin(\omega x)$
D01ATF	13	nagf_quad_1d_fin_bad_vec One-dimensional quadrature, adaptive, finite interval, variant of D01AJF efficient on vector machines
D01AUF	13	nagf_quad_1d_fin_osc_vec One-dimensional quadrature, adaptive, finite interval, variant of D01AKF efficient on vector machines
D01BCF	8	nagf_quad_1d_gauss_wgen Calculation of weights and abscissae for Gaussian quadrature rules, general choice of rule
D01BDF	8	nagf_quad_1d_fin_smooth One-dimensional quadrature, non-adaptive, finite interval
D01DAF	5	nagf_quad_2d_fin Two-dimensional quadrature, finite region
D01EAF	12	nagf_quad_md_adapt_multi Multidimensional adaptive quadrature over hyper-rectangle, multiple integrands
D01ESF	25	nagf_quad_md_sgq_multi_vec Multi-dimensional quadrature using sparse grids