Numerical Quadrature

and its Applications

Software Section

by

G. A. Evans

Contents

Prog	Title	Reference
1	Multiple Precision Arithmetic	Algol 68 NAG library
2	Interval arithmetic package	Algol 68 NAG library
3	General standard multidimensional integrator	*
4	An adaptive integrator	*
5	Newton-Cotes oscillatory integrator	*C. J.* **18**, No. 2, (1975)
6	Bessel functions	*Maths. Res.* **53**, (1975)
7	Finite range oscillatory integrals	*C. J.* **19** No. 3, (1976)
8	Infinite range oscillatory integrals	*J. Comp. Phys.* **13**, (1973)
9	The routine infint	*J. Comp. Phys.* **13**, (1973) *J. Comp. Phys.* **22**, (1976)
10	Singular quadrature with accelerators	*Int. J. Comp. Math.* **12**, (1983)
11	Singular quadratures by transformation	*Int. J. Comp. Maths.* **15**, (1984) *Int. J. Comp. Math.* **27** ,(1989)
12	Two dimensional singular quadrature	*Int. J. Comp. and Appl. Math.* **24**, (1988)
13	Three dimensional singular quadrature	*Int. J. Comp. and Appl. Math.*, (1989)
14	Non-linear integral equations	*Int. J. Comp. Math.* **11**,(1982)
15	Non-linear integral equations variational method	*Int. J. Comp. Maths.* **22**, (1987)
16	Hartree-Fock atomic systems	*Int.J. Quantum Chem.* **12**, (1977)
17	Ion beam model	*Vacuum* **34**,(1984) *Vacuum* **36**,(1986)
18	Eddy current model	*Proc. Eddy current sem.*,(1988)

* These routines implement standard methods and have been used extensively to generate comparative results throughout the work.