

Numerical Software Bibliography

Kenneth R. Jackson,
Computer Science Dept., University of Toronto,
Toronto, Ontario, Canada M5S 1A4.

krj@cs.toronto.edu or krj@cs.utoronto.ca

January 1992.

A A Few General Scientific Computing, Numerical Methods, Numerical Analysis Texts.

- A.1. G. Dahlquist, A. Björck and N. Anderson, *Numerical Methods*, Prentice-Hall, 1974.
- A.2. G. E. Forsythe, M. A. Malcolm and C. B. Moler, *Computer Methods for Mathematical Computation*, Prentice-Hall, 1977.
- A.3. G. H. Golub and J. M. Ortega, *Scientific Computing and Differential Equations*, Academic Press, 1992.
- A.4. G. H. Golub and J. M. Ortega, *Scientific Computing: an Introduction with Parallel Computing*, Academic Press, 1993.
- A.5. M. Heath, *Scientific Computing: An Introductory Survey*, McGraw Hill, second edition, 2002.
- A.6. D. Kahaner, C. Moler, and S. Nash, *Numerical Methods and Software*, Prentice Hall, 1989.
- A.7. J. R. Rice, *Matrix Computations and Mathematical Software*, McGraw-Hill, 1981.

B General Discussion of Numerical Software Engineering.

- B.1. W. Cowell (ed.), *Sources and Development of Mathematical Software*, Prentice-Hall, 1984.
- B.2. Bo Einarsson (ed.), *Accuracy and Reliability in Scientific Computing*, SIAM, 2005.
- B.3. D. J. Evans (ed.), *Software for Numerical Mathematics*, Academic Press, 1974.
- B.4. W. Miller, *The Engineering of Numerical Software*, Prentice-Hall, 1984.
- B.5. M. A. Hennell and L. M. Delves (eds.), *Production and Assessment of Numerical Software*, Academic Press, 1980.
- B.6. D. A. H. Jacobs, *Numerical Software — Needs and Availability*, Academic Press, 1978.
- B.7. J. Reid (ed.), *The Relationship Between Numerical Computation and Programming Languages*, North-Holland, 1982.
- B.8. J. R. Rice (ed.), *Mathematical Software*, Academic Press, 1971.
- B.9. J. R. Rice (ed.), *Mathematical Software III*, Academic Press, 1977.
- B.10. J. Wilkinson, “Some comments from a numerical analyst”, *J. of the ACM*, April 1971, 137–147.

C Traditional Software Engineering Applied to Scientific Computing.

- C.1. W. Howden, “Applicability of software validation techniques to scientific programs”, *ACM Trans. on Programming Languages and Systems*, July 1980, 307–320.
- C.2. W. Howden, “Validation of scientific programs”, *ACM Computing Surveys*, June 1982, 193–227.

D Performance Evaluations.

- D.1. L. Fosdick (ed.), *Performance Evaluation of Numerical Software*, North-Holland, 1979.
- D.2. Parlett and Wang, *The influence of the compiler on the cost of mathematical software*,

E Floating-Point Arithmetic.

- E.1. D. Goldberg, “What every computer scientist should know about floating-point arithmetic”, *ACM Computing Surveys*, 23 (1991), 5–48.

F Portability.

- F.1. W. Cowell (ed.), *Portability of Numerical Software*, Springer-Verlag, 1977.
- F.2. J. Larmouth, “Fortran 77 portability”, *Software — Practice and Experience*, Oct. 1981, 1071–1117.

G Elementary Functions.

- G.1. W. J. Cody Jr. and W. Waite, *Software Manual for the Elementary Functions*, Prentice-Hall, 1980.
- G.2. E. E. McDonnell, “A perfect square root routine”, *APL Quote Quad*, 16 (1986), pp. 289–294.

H Ordinary Differential Equations.

- H.1. L. F. Shampine, H. A. Watts and S. M. Davenport, “Solving nonstiff ordinary differential equations — the state of the art”, *SIAM Review*, July 1976, 376–411.