

Numerical Methods in Physics and Astrophysics

List of suggested books

1. [Applied Numerical Analysis C.F. Gerald & P.O.Wheatley, Addison-Wesley 7th Edition \(2004\)](#)
2. [Numerical Recipes. The Art of Scientific Computing W.H. Press, S.A.Teukolsky, & W. T. Vetterling, Cambridge University Press \(2007\)](#)
3. [Computational Physics - A Practical Introduction to Computational Physics and Scientific Computing, Konstantinos Anagnostopoulos \(2014\)](#)
NOTE: The book can be downloaded freely in various formats from the site:
<http://www.physics.ntua.gr/~konstant/ComputationalPhysics/index.html>
4. Numerical methods for mathematics, science and engineering, John H. Mathews, Prentice Hall (1994)
5. Computational Physics: FORTRAN by Steven E. Koonin Westview Press (1998)
6. Exploring NUMerical Methods: An introduction to scientific Computing Using MATLAB, Peter Linz & Richard L.C. Wang Jones & Bartlett Publ. (2003)
7. Numerical Analysis: Mathematics of Scientific Computing by David R. Kincaid & E. Ward Cheney Brooks/Cole Pub Co; 2nd edition (2001)
8. Introduction to Numerical Analysis by J. Stoer & R. Bulirsch Springer
9. Numerische Mathematik 1, Josef Stoer Springer-Lehrbuch (2006)
10. Numerische Mathematik 2, Josef Stoer & Roland Bulrich Springer-Lehrbuch (2007)[Advanced]
11. Introduction to Applied Numerical Analysis by Richard W. Hamming (McGraw-Hill computer science series) (1971)

Advanced

1. Numerical Partial Differential Equations : Finite Difference Methods, J. W. Thomas, Springer (1998)
2. Numerical Partial Differential Equations : Conservation Laws and Elliptical Equations, J. W. Thomas, Springer (1999)
3. Boundary Value Problems and Partial Differential Equations, D. L. Powers, Elsevier (2010)

Resources for C

- Short introductions to C:
<http://de.wikibooks.org/wiki/C-Programmierung>
<http://c-buch.sommergut.de/index.shtml>
- Reference of the C-standard libraries:
<http://www2.hs-fulda.de/~klungebiel/c-stdlib/index.htm>