

Hultquist, Paul F.

Numerical methods. For engineers and computer scientists. (English) Zbl 0721.68002
Menlo Park, CA: The Benjamin/Cummings Publishing Company. xiii, 326 p. DM 106.00 (1988).

The book gives an introduction into the representation of machine numbers and sources of errors and, in particular, the most popular numerical methods used in practice. Topics treated are systems of linear and nonlinear equations, curve fitting, evaluation of integrals, differential equations and special mathematical functions. In all cases, the basic features of the most important numerical methods are outlined and explained by means of examples. Mathematical details of algorithms or any analytical proofs are not presented.

Thus the goal of the book is to make numerical methods understandable for those who want to apply the ideas and the available software to solve practical problems. Numerous examples, exercises and project problems, many of them with some engineering background, are included. It is explained how IMSL, LINPACK and some other software is available and can be applied to solve a problem. Moreover, PASCAL listings of algorithms are included, which may be useful to solve at least simple problems rapidly.

To sum up, the book is an excellent introduction how to use available numerical software to solve problems. It is particularly useful for students in engineering, natural and computer sciences.

Reviewer: [Klaus Schittkowski \(Bayreuth\)](#)

MSC:

- 68-01 Introductory exposition (textbooks, tutorial papers, etc.) pertaining to computer science Cited in 4 Documents
- 65Y99 Computer aspects of numerical algorithms
- 65-01 Introductory exposition (textbooks, tutorial papers, etc.) pertaining to numerical analysis

Keywords:

[numerical analysis](#); [representation of machine numbers](#); [sources of errors](#); [numerical methods](#); [numerical software](#)