

**Strikwerda, John C.**

**Finite difference schemes and partial differential equations. 2nd ed.** (English) Zbl 1071.65118  
Philadelphia, PA: Society for Industrial and Applied Mathematics (SIAM) (ISBN 0-89871-567-9/hbk).  
xii, 435 p. (2004).

The first edition of the book has been well accepted by the scientific community. Also, there are only few books (if there are any at all) presenting the analysis of the finite difference method for the three standard types of PDEs in a similar thorough way. So it is no surprise that a second edition followed. Only a few additions have been made compared to the first edition (1989; [Zbl 0681.65064](#)).

Reviewer: [Rolf Dieter Grigorieff \(Berlin\)](#)

**MSC:**

- [65Mxx](#) Numerical methods for partial differential equations, initial value and time-dependent initial-boundary value problems
- [65Nxx](#) Numerical methods for partial differential equations, boundary value problems
- [65F10](#) Iterative numerical methods for linear systems
- [65N22](#) Numerical solution of discretized equations for boundary value problems involving PDEs
- [65-02](#) Research exposition (monographs, survey articles) pertaining to numerical analysis
- [65M06](#) Finite difference methods for initial value and initial-boundary value problems involving PDEs
- [65M12](#) Stability and convergence of numerical methods for initial value and initial-boundary value problems involving PDEs
- [65N06](#) Finite difference methods for boundary value problems involving PDEs
- [65N12](#) Stability and convergence of numerical methods for boundary value problems involving PDEs
- [35Jxx](#) Elliptic equations and elliptic systems
- [35Kxx](#) Parabolic equations and parabolic systems
- [35Lxx](#) Hyperbolic equations and hyperbolic systems

Cited in **240** Documents

**Keywords:**

[finite difference methods](#); [consistency](#); [stability](#); [textbook](#); [multistep schemes](#); [Fourier analysis](#); [Kreiss matrix theorem](#); [hyperbolic, parabolic and elliptic equations](#); [well-posedness](#); [iterative methods](#)