

## Finite difference schemes and partial differential equations

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### Abstrak

This book provides a unified and accessible introduction to the basic theory of finite difference schemes applied to the numerical solution of partial differential equations. Originally published in 1989, its objective remains to clearly present the basic methods necessary to perform finite difference schemes and to understand the theory underlying the schemes.

Finite Difference Schemes and Partial Differential Equations, Second Edition is one of the few texts in the field to not only present the theory of stability in a rigorous and clear manner but also to discuss the theory of initial-boundary value problems in relation to finite difference schemes. Fourier analysis is used throughout the book to give a unified treatment of many of the important ideas found in the first eleven chapters. The material on elliptic partial differential equations found in the later chapters provides an introduction that will enable students to progress to more advanced texts and to knowledgeably implement the basic methods.