
Description:

Praise for the First Edition

“. . . fills a considerable gap in the numerical analysis literature by providing a self-contained treatment . . . this is an important work written in a clear style . . . warmly recommended to any graduate student or researcher in the field of the numerical solution of partial differential equations.”

SIAM Review


The Second Edition presents hyperbolic equations in great detail as well as new coverage on second–order systems of wave equations including acoustic waves, elastic waves, and Einstein equations. Compared to first–order hyperbolic systems, initial–boundary value problems for such systems contain new properties that must be taken into account when analyzing stability. Featuring the latest material in partial differential equations with new theorems, examples, and illustrations,Time–Dependent Problems and Difference Methods, Second Edition also includes:

- High order methods on staggered grids
- Extended treatment of Summation By Parts operators and their application to second–order derivatives
- Simplified presentation of certain parts and proofs

Time–Dependent Problems and Difference Methods, Second Edition is an ideal reference for physical scientists, engineers, numerical analysts, and mathematical modelers who use numerical experiments to test designs and to predict and investigate physical phenomena. The book is also excellent for graduate–level courses in applied mathematics and scientific computations.

Contents:

Preface ix

Preface to the First Edition xi

PART I PROBLEMS WITH PERIODIC SOLUTIONS 1

1. Model Equations 3

1.1. Periodic Gridfunctions and Difference Operators 3

1.2. First–Order Wave Equation Convergence and Stability 10

1.3. Leap–Frog Scheme 20

1.4. Implicit Methods 24

1.5. Truncation Error 27

1.6. Heat Equation 30

1.7. Convection Diffusion Equation 36

1.8. Higher Order Equations 39

1.9. Second–Order Wave Equation 41
10.4. The Elastic Wave Equations 331
10.5. Einstein’s Equations and General Relativity 335
11.1. Hyperbolic Problems 339
11.2. Parabolic Problems 350
11.3. Stability Consistency and Order of Accuracy 357
11.4. SBP Difference Operators 362
12. The Laplace Transform Method for Difference Approximations 377
12.1. Necessary Conditions for Stability 377
12.2. Sufficient Conditions for Stability 387
12.3. Stability in the Generalized Sense for Hyperbolic Systems 405
12.4. An Example that Does Not Satisfy the Kreiss Condition But is Stable in the Generalized Sense 416
12.5. The Convergence Rate 423
13. The Laplace Transform Method for Fully Discrete Approximations 431
13.2. The Method of Lines and Stability in the Generalized Sense 451
Appendix A Fourier Series and Trigonometric Interpolation 465
A.1. Some Results from the Theory of Fourier Series 465
A.2. Trigonometric Interpolation 469
A.3. Higher Dimensions 473
Appendix B Fourier and Laplace Transform 477
B.1. Fourier Transform 477
B.2. Laplace Transform 480
Appendix C Some Results from Linear Algebra 485
Appendix D SBP Operators 489
References 499
Index 507

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