Time-Dependent Problems and Difference Methods

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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.

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