

Fourier analysis of numerical approximations of hyperbolic equations

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Abstrak

There has been a growing interest in the use of Fourier analysis to examine questions of accuracy and stability of numerical methods for solving partial differential equations. This kind of analysis can produce particularly attractive and useful results for hyperbolic equations.

This book provides useful reference material for those concerned with computational fluid dynamics: for physicists and engineers who work with computers in the analysis of problems in such diverse fields as hydraulics, gas dynamics, plasma physics, numerical weather prediction, and transport processes in engineering, and who need to understand the implications of the approximations they use; and for applied mathematicians concerned with the more theoretical aspects of these computations.