

Spectral methods in MATLAB

Trefethen, Lloyd N., author

Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20443257&lokasi=lokal>

Abstrak

This is the only book on spectral methods built around MATLAB programs. Along with finite differences and finite elements, spectral methods are one of the three main technologies for solving partial differential equations on computers. Since spectral methods involve significant linear algebra and graphics they are very suitable for the high level programming of MATLAB. This hands-on introduction is built around forty short and powerful MATLAB programs, which the reader can download from the World Wide Web.

This book presents the key ideas along with many figures, examples, and short, elegant MATLAB programs for readers to adapt to their own needs. It covers ODE and PDE boundary value problems, eigenvalues and pseudospectra, linear and nonlinear waves, and numerical quadrature.