

MT-617 Advanced Numerical Methods for Partial Differential Equations

A two-point boundary value problem, Second-order scalar elliptic boundary value problems, Finite element methods (FEM), Finite difference (FD) and Finite Volume Methods (FV), Convergence and Accuracy, 2nd-Order Linear Evolution Problems, Convection-Diffusion Problems (Convection also includes time value problems) Numerical Methods for Conservation Laws.

Reference Books:

1. Finite volume methods for hyperbolic problems by Randall J. Leveque, 2002
2. Chebyshev & Fourier spectral methods by John P. Boyd, 2nd Edition, 2001