NPTEL Video Course - Mathematics - NOC:Matrix Solver

Subject Co-ordinator - Prof. Somnath Roy

Co-ordinating Institute - IIT - Kharagpur

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 30 - Positive definiteness of a matrix
Lecture 31 - Positive definiteness of a matrix (Continued...)
Lecture 32 - Basic Iterative Methods
Lecture 33 - Basic Iterative Methods
Lecture 34 - Convergence Rate and Convergence Factor for Iterative Methods
Lecture 35 - Numerical Experiments on Convergence
Lecture 36 - Steepest Descent Method
Lecture 37 - Steepest Descent Method
Lecture 38 - Steepest Descent Method
Lecture 39 - Introduction to General Projection Methods
Lecture 40 - Residue Norm and Minimum Residual Algorithm
Lecture 41 - Developing computer programs for basic iterative methods
Lecture 42 - Developing computer programs for projection based methods
Lecture 43 - Introduction to Krylov subspace methods
Lecture 44 - Krylov subspace methods for linear systems
Lecture 45 - Iterative methods for solving linear systems using Krylov subspace methods
Lecture 46 - Conjugate gradient methods
Lecture 47 - Conjugate gradient methods (Continued...)
Lecture 48 - Conjugate gradient methods (Continued...) and Introduction to GMRES
Lecture 49 - GMRES (Continued...)
Lecture 50 - Lanczos Biorthogonalization and BCG Algorithm
Lecture 51 - Numerical issues in BICG and polynomial based formulation
Lecture 52 - Conjugate gradient squared and Biconjugate gradient stabilized
Lecture 53 - Line relaxation method
Lecture 54 - Block relaxation method
Lecture 55 - Domain Decomposition and Parallel Computing
Lecture 56 - Preconditioners
Lecture 57 - Preconditioned conjugate gradient
Lecture 58 - Preconditioned GMRES
Lecture 59 - Multigrid methods - I
Lecture 60 - Multigrid methods - II