

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Mathematics - NOC:Operator Theory

Subject Co-ordinator - Prof. G. Ramesh

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Semi Inner product spaces
Lecture 2 - Inner Product Spaces
Lecture 3 - Parallelogram law
Lecture 4 - Hilbert Spaces
Lecture 5 - Orthogonality
Lecture 6 - Projection Theorem
Lecture 7 - Linear Operator
Lecture 8 - Bounded Operators
Lecture 9 - Norm of a linear operator
Lecture 10 - Examples of bounded operators
Lecture 11 - The Adjoint Operator
Lecture 12 - The Adjoint: Properties
Lecture 13 - Closed range operators - 1
Lecture 14 - Closed range operators - 2
Lecture 15 - Self-adjoint Operators
Lecture 16 - Normal operators
Lecture 17 - Isometris and Unitaries
Lecture 18 - Isometris and Unitaries
Lecture 19 - Mutually Orthogonal Projections
Lecture 20 - Invariant Subspaces
Lecture 21 - Monotone Convergence Theorem
Lecture 22 - Square root
Lecture 23 - Polar decomposition
Lecture 24 - Invertibility
Lecture 25 - Spectrum
Lecture 26 - Spectral Mapping Theorem
Lecture 27 - The spectral radius formula
Lecture 28 - multiplicative linear functionals
Lecture 29 - The GKZ-theorem

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- Lecture 30 - Maximal Ideal Space
- Lecture 31 - Commutative C^* -algebras
- Lecture 32 - Decomposition of spectrum
- Lecture 33 - Computing spectrum: Examples
- Lecture 34 - Approximate spectrum
- Lecture 35 - Approximate spectrum: Properties
- Lecture 36 - Numerical bounds
- Lecture 37 - Compact Operators
- Lecture 38 - Compact Operators; Properties
- Lecture 39 - Spectral Theorem: Compact Self-Adjoint Operators
- Lecture 40 - Spectral Theorem: Consequences
- Lecture 41 - Compact Normal Operators
- Lecture 42 - Compact Operators Singular value Decomposition
- Lecture 43 - Fredholm Alternative Theorem
- Lecture 44 - Orthogonal decomposition of self-adjoint operators
- Lecture 45 - Spectral family; Properties - I
- Lecture 46 - Spectral family; Properties - II
- Lecture 47 - Spectral theorem Self adjoint Operators
- Lecture 48 - Spectral theorem Examples
- Lecture 49 - Spectral theorem: Consequences
- Lecture 50 - Continuous functional Calculus
- Lecture 51 - Spectral mapping theorem