

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

NPTEL Video Course - Physics - Quantum Mechanics and Applications

Subject Co-ordinator - Prof. Ajoy Ghatak

Co-ordinating Institute - IIT - Delhi

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

Lecture 1 - Basic Quantum Mechanics I
Lecture 2 - Basic Quantum Mechanics II
Lecture 3 - Dirac Delta Function & Fourier Transforms
Lecture 4 - The Free Particle
Lecture 5 - Physical Interpretation of The Wave Function
Lecture 6 - Expectation Values & The Uncertainty Principle
Lecture 7 - The Free Particle (Continued...)
Lecture 8 - Interference Experiment & The Particle in a Box Problem
Lecture 9 - On Eigen Values and Eigen Functions of the 1 Dimensional Schrodinger Equation
Lecture 10 - Linear Harmonic Oscillator
Lecture 11 - Linear Harmonic Oscillator (Continued...1)
Lecture 12 - Linear Harmonic Oscillator (Continued...2)
Lecture 13 - Linear Harmonic Oscillator (Continued...3)
Lecture 14 - Tunneling through a Barrier
Lecture 15 - The 1-Dimensional Potential Wall & Particle in a Box
Lecture 16 - Particle in a Box and Density of States
Lecture 17 - The Angular Momentum Problem
Lecture 18 - The Angular Momentum Problem (Continued...)
Lecture 19 - The Hydrogen Atom Problem
Lecture 20 - The Two Body Problem
Lecture 21 - TheTwo Body Problem
Lecture 22 - Two Body Problem
Lecture 23 - 3d Oscillator & Dirac's Bra and Ket Algebra
Lecture 24 - Dirac's Bra and Ket Algebra
Lecture 25 - Dirac's Bra and Ket Algebra
Lecture 26 - The Linear Harmonic Oscillator using Bra and Ket Algebra (Continued...)
Lecture 27 - The Linear Harmonic Oscillator
Lecture 28 - Coherent State and Relationship with the Classical Oscillator
Lecture 29 - Angular Momentum Problem using Operator Algebra

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- Lecture 30 - Angular Momentum Problem (Continued...)
- Lecture 31 - Pauli Spin Matrices and The Stern Gerlach Experiment
- Lecture 32 - The Larmor Precession and NMR Spherical Harmonics using Operator Algebra
- Lecture 33 - Addition of Angular Momentum
- Lecture 34 - Clebsch Gordon Coefficients
- Lecture 35 - The JWKB Approximation
- Lecture 36 - The JWKB Approximation
- Lecture 37 - The JWKB Approximation
- Lecture 38 - The JWKB Approximation
- Lecture 39 - The JWKB Approximation
- Lecture 40 - Time Independent Perturbation Theory
- Lecture 41 - Time Independent Perturbation Theory (Continued...1)
- Lecture 42 - Time Independent Perturbation Theory (Continued...2)