

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

NPTEL Video Course - Physics - N0C:Waves and Oscillations

Subject Co-ordinator - Prof. M. S. Santhanam

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Simple Harmonic Motion
Lecture 2 - Superposition of Oscillations
Lecture 3 - Superposition of Oscillations
Lecture 4 - Superposition of Oscillations
Lecture 5 - Simple Harmonic Motion
Lecture 6 - Damped oscillator - Part 1
Lecture 7 - Damped oscillator - Part 2
Lecture 8 - Damped oscillator and Q-factor
Lecture 9 - Damped oscillator
Lecture 10 - Forced oscillator - Part 1
Lecture 11 - Forced oscillator - Part 2
Lecture 12 - Resonances
Lecture 13 - Q-factor of forced oscillator
Lecture 14 - Applications of forced oscillator
Lecture 15 - Forced Oscillator
Lecture 16 - Coupled Oscillations - Part 1
Lecture 17 - Coupled Oscillations - Part 2
Lecture 18 - Solving for normal modes
Lecture 19 - Coupled oscillations - More examples
Lecture 20 - Coupled oscillator
Lecture 21 - Coupled Oscillations of Loaded String
Lecture 22 - Solutions for Loaded String
Lecture 23 - Oscillations of Loaded String
Lecture 24 - Continuum Limit of Loaded String
Lecture 25 - Wave equation and its solutions
Lecture 26 - Wave equation - impedance and velocities
Lecture 27 - Standing waves
Lecture 28 - Transverse waves in periodic structures
Lecture 29 - Wave equation

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- Lecture 30 - Reflection and transmission of waves
- Lecture 31 - Impedance matching
- Lecture 32 - Energy of vibrating string
- Lecture 33 - Dispersion of waves
- Lecture 34 - Bandwidth theorem and problems
- Lecture 35 - Longitudnal Waves and Speed of Sound
- Lecture 36 - Longitudnal Standing Waves
- Lecture 37 - Sound Intensity
- Lecture 38 - Longitudnal Waves
- Lecture 39 - Fourier Series - Part 1
- Lecture 40 - Fourier Series - Part 2
- Lecture 41 - Fourier Series and Energy of Vibrating String
- Lecture 42 - Frequency Spectrum and Fourier Transforms
- Lecture 43 - Fourier Series
- Lecture 44 - Waves in Optical Systems
- Lecture 45 - Waves in Optical Systems
- Lecture 46 - Waves in Optical Systems
- Lecture 47 - Waves in Optical Systems
- Lecture 48 - Waves in Optical Systems
- Lecture 49 - Interference
- Lecture 50 - Interference
- Lecture 51 - Michelson and Fabry-Perot Interferometers
- Lecture 52 - Young's Double Slit Experiment
- Lecture 53 - Diffraction
- Lecture 54 - Beyond Linear Oscillators
- Lecture 55 - Beyond Linear Oscillators
- Lecture 56 - Beyond Linear Oscillators
- Lecture 57 - Beyond Linear Waves
- Lecture 58 - Waves in Quantum Mechanics and Summary