

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

NPTEL Video Course - Physics - N0C:Introduction to Quantum Field Theory (Theory of Scalar Fields)

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Co-ordinating Institute - IIT - Hyderabad

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

Lecture 1 - Quantum Filed Theory
Lecture 2 - Quantizing Schrodinger Field
Lecture 3 - Quantizing Schrodinger Field (Continued...)
Lecture 4 - Symmetry and normalization of the states
Lecture 5 - A multiparticle system of Bosons
Lecture 6 - Klein-Gordon Equation
Lecture 7 - Quantization of Klein-Gordon Theory
Lecture 8 - Quantization of Klein-Gordon Theory (Continued...)
Lecture 9 - Quantization of Klein-Gordon Theory (Continued...)
Lecture 10 - Quantization of Klein-Gordon Theory (Continued...)
Lecture 11 - Quantization of Klein-Gordon Theory (Continued...)
Lecture 12 - Qunatization of Klein-Gordon Theory (Continued...)
Lecture 13 - Quantization of Klein-Gordon Theory (Continued...)
Lecture 14 - Feynman propagator - 2
Lecture 15 - Feynman propagator - 3
Lecture 16 - Symmetries
Lecture 17 - Lorentz transformations
Lecture 18 - Lorentz transformations (Continued...)
Lecture 19 - Lorentz Group
Lecture 20 - Groups and Generators
Lecture 21 - SU(3) Generators
Lecture 22 - Representation of groups. Poincare group
Lecture 23 - Poincare Algebra
Lecture 24 - Symmetries in Classical Field Theories
Lecture 25 - Symmetries (Continued...)
Lecture 26 - Symmetries (Continued...)
Lecture 27 - Symmetries (Continued...)
Lecture 28 - Noether's theorem: The Proof
Lecture 29 - Noether's theorem (Continued...)

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- Lecture 30 - Momentum in KG Theory
- Lecture 31 - Noether Currents corresponding to Lorentz symmetry
- Lecture 32 - Conserved currents and charges due to Lorentz symmetry
- Lecture 33 - Conserved charges as symmetry generators
- Lecture 34 - Consequences of symmetry
- Lecture 35 - A boring world: Scattering in a free theory
- Lecture 36 - Φ^4 Theory
- Lecture 37 - Φ^4 Theory: Manipulating the ground state
- Lecture 38 - Φ^4 Theory: Interaction picture - 1
- Lecture 39 - Φ^4 Theory: Interaction picture - 2
- Lecture 40 - Φ^4 Theory: Interaction picture (Continued...)
- Lecture 41 - Φ^4 Theory: Interaction picture (Continued...)
- Lecture 42 - Wick's Theorem
- Lecture 43 - Wick's Theorem (Continued...)
- Lecture 44 - Feynman Diagrams
- Lecture 45 - Feynman Diagrams (Continued...)
- Lecture 46 - Momentum space Feynman rules for $G(x_1, \dots, x_N)$
- Lecture 47 - Feynman rules for $G(p_1, p_2, \dots, p_N)$
- Lecture 48 - Feynman rules for $G(p_1, p_2, \dots, p_N)$ (Continued...)
- Lecture 49 - Cancellation of Bubble diagrams
- Lecture 50 - Examples of Feynman Diagrams
- Lecture 51 - Survey