NPTEL Video Course - Physics - NOC:Computational Physics

Subject Co-ordinator - Prof. Prasenjit Ghosh

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Introduction to Fortran - Part 1
Lecture 2 - Introduction to Fortran - Part 2
Lecture 3 - Introduction to Fortran - Part 3
Lecture 4 - Introduction to Fortran - Part 4
Lecture 5 - Introduction to Fortran - Part 5
Lecture 6 - Numerical Integration - Part 1
Lecture 7 - Numerical Integration - Part 2
Lecture 8 - Numerical Integration - Part 3
Lecture 9 - Numerical Integration - Part 4
Lecture 10 - Numerical Integration - Part 5
Lecture 11 - Numerical Integration - Part 6
Lecture 12 - Numerical Integration - Part 7
Lecture 13 - Numerical Integration - Part 8
Lecture 14 - Numerical Integration - Part 9
Lecture 15 - Numerical Integration - Part 10
Lecture 16 - Monte Carlo Simulation Introduction - Part 1
Lecture 17 - Monte Carlo Simulation Introduction - Part 2
Lecture 18 - Implementing the Ising model on computer
Lecture 19 - Periodic Boundary conditions and the Metropolis scheme
Lecture 20 - Testing the simulation and relaxation to equilibrium, finte size effects
Lecture 21 - Monte Carlo Simulation Analysis - Part 1
Lecture 22 - Monte Carlo Simulation Analysis - Part 2
Lecture 23 - Monte Carlo Simulation Analysis
Lecture 24 - Monte Carlo Simulation Analysis
Lecture 25 - Calculating T_c using Binders cumulant; Principle of detailed balance
Lecture 26 - Differential Equations Euler and Runge Kutta - Part 1
Lecture 27 - Differential Equations Euler and Runge Kutta - Part 2
Lecture 28 - Differential Coupled Equation Non Linear Equation - Part 1
Lecture 29 - Differential Coupled Equation Non Linear Equation - Part 2

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Lecture 30 - Coupled Differential Equation Visualisation and Making Movie
Lecture 31 - Differential Equations With Specified Boundary Conditions - Part 1
Lecture 32 - Differential Equations With Specified Boundary Conditions - Part 2
Lecture 33 - Partial Differential equations - 1
Lecture 34 - Partial Differential equations - 2
Lecture 35 - Partial Differential equations - 3
Lecture 36 - Differential Equation for Quantum Mechanical Problems
Lecture 37 - Differential Equation for Quantum Mechanical Problems
Lecture 38 - Differential Equation for Quantum Mechanical Problems
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Lecture 40 - Differential Equation for Quantum Mechanical Problems
Lecture 41 - Differential Equation for Quantum Mechanical Problems
Lecture 42 - Differential Equation for Quantum Mechanical Problems
Lecture 43 - Differential Equation for Quantum Mechanical Problems
Lecture 44 - Differential Equation for Quantum Mechanical Problems
Lecture 45 - Differential Equation for Quantum Mechanical Problems
Lecture 46 - Molecular Dynamics Introduction - Part 1
Lecture 47 - Molecular Dynamics Introduction - Part 2
Lecture 48 - Molecular Dynamics Details and Algorithm - Part 1
Lecture 49 - Molecular Dynamics Details and Algorithm - Part 2
Lecture 50 - Molecular Dynamics Details and Algorithm - Part 3
Lecture 51 - Molecular Dynamics Analysis - Part 1
Lecture 52 - Molecular Dynamics Analysis - Part 2
Lecture 53 - Molecular Dynamics Neighbours Lists - Part 1
Lecture 54 - Molecular Dynamics Neighbours Lists - Part 2
Lecture 55 - Molecular Dynamics
Lecture 56 - Molecular Dynamics Diffusion Constant Calculation - Part 1
Lecture 57 - Molecular Dynamics Diffusion Constant Calculation - Part 2
Lecture 58 - Molecular Dynamics Diffusion Constant Calculation - Part 3
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