NPTEL Video Course - Physics - Selected Topics in Mathematical Physics

Subject Co-ordinator - Prof. V. Balakrishnan

Co-ordinating Institute - IIT - Madras

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

Lecture 1 - Analytic functions of a complex variable - Part I
Lecture 2 - Analytic functions of a complex variable - Part II
Lecture 3 - Calculus of residues - Part I
Lecture 4 - Calculus of residues - Part II
Lecture 5 - Calculus of residues - Part III
Lecture 6 - Calculus of residues - Part IV
Lecture 7 - Linear response; dispersion relations - Part I
Lecture 8 - Linear response; dispersion relations - Part II
Lecture 9 - Analytic continuation and the gamma function - Part I
Lecture 10 - Analytic continuation and the gamma function - Part II
Lecture 11 - Möbius transformations - Part I
Lecture 12 - Möbius transformations - Part II
Lecture 13 - Möbius transformations - Part III
Lecture 14 - Multivalued functions; integral representations - Part I
Lecture 15 - Multivalued functions; integral representations - Part II
Lecture 16 - Multivalued functions; integral representations - Part III
Lecture 17 - Multivalued functions; integral representations - Part IV
Lecture 18 - Laplace transforms - Part I
Lecture 19 - Laplace transforms - Part II
Lecture 20 - Fourier transforms - Part I
Lecture 21 - Fourier transforms - Part II
Lecture 22 - Fourier transforms - Part III
Lecture 23 - Fundamental Green function for ∇^2 - Part I
Lecture 24 - Fundamental Green function for ∇^2 - Part II
Lecture 25 - The diffusion equation - Part I
Lecture 26 - The diffusion equation - Part II
Lecture 27 - The diffusion equation - Part III
Lecture 28 - The diffusion equation - Part IV
Lecture 29 - Green function for $(\nabla^2 + k^2)$; nonrelativistic scattering - Part I

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Lecture 30 - Green function for (Î 2 + k2); nonrelativistic scattering - Part II
Lecture 31 - Green function for (Î 2 + k2); nonrelativistic scattering - Part III
Lecture 32 - The wave equation - Part I
Lecture 33 - The wave equation - Part II
Lecture 34 - The rotation group and all that - Part I
Lecture 35 - The rotation group and all that - Part II
Lecture 36 - The rotation group and all that - Part III
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