

<<理论物理学数学透视>>

图书基本信息

书名：<<理论物理学数学透视>>

13位ISBN编号：9781860943645

10位ISBN编号：1860943640

出版时间：2003-10

出版时间：Imperial College Press

作者：Prakash, Nirmala

页数：835

版权说明：本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问：<http://www.tushu007.com>

<<理论物理学数学透视>>

内容概要

This book presents the basics of mathematics that are needed for learning the physics of today. It describes briefly the theories of groups and operators, finite- and infinite-dimensional algebras, concepts of symmetry and supersymmetry, and then delineates their relations to theories of relativity and black holes, classical and quantum physics, electroweak fields and Yang-ills. It concludes with a chapter on (the complex theory of) strings and superstrings and their link to black holes ?an idea that fascinates both the physicist and the mathematician.

<<理论物理学数学透视>>

书籍目录

Preface Foreword Acknowledgements Chapter 0. Preliminaries 1. Basic Definitions 2. Topology Exercise (0.2) Hints to Exercise (0.2) 3. Differentiable Manifolds 3.1 Differentiable Manifolds 3.2 Tangent Space 3.3 Vector Fields, Tensors and Tensor Fields 3.4 Riemannian Metric and Covariant Derivation 3.5 Geodesics, Jacobi Fields, Curvature and Torsion 4. Measure, Exp H, Dirac δ -function 4.1 Measurable Spaces and Measurable Functions 4.2 Haar Measure 4.3 The Space Exp H 4.4 Dirac δ -function 5. Examples Based on Differential Geometry 5.1 Critical Points 6. Basic Definitions in Algebraic Topology 6.1 de Rham Complex and de Rham Cohomology 6.2 Category and Functors 6.3 Mayer-Vietoris Sequence 6.4 Homotopy References Chapter 1. Complex Functions, Riemann Surfaces and Two-Dimensional Conformal Field Theory (an Introduction) 1. Complex Functions 1.1 Complex Plane 1.2 Analytic Function 1.3 Harmonic Functions 1.4 Laurent Series 1.5 Simply Connected and Multiply Connected Domain 1.6 Residues and Poles 1.7 Elliptic Curves 2. Complex Structure on a Manifold, Kahler Metric 2.1 Complex Manifold M 2.2 Complex Structure on M 2.3 The Tangent and Cotangent Spaces to M 2.4 Holomorphic Vector Fields and Holomorphic Forms on M 2.5 Some Calculus on M 2.6 Kahler Manifold 2.7 Harmonic Forms on a Kahler Manifold Exercise (1.2) Hints to Exercise (1.2) 3. Riemann Surfaces 3.1 Riemann Surface M 3.2 Holomorphic Mappings on M 3.3 Differential Forms on M, their Algebra and Calculus 3.4 The Star (*) Operator on M 3.5 Harmonic and Holomorphic Forms on M 3.6 Square-integrable 1-forms on M 3.7 Abelian Differentials on M 3.8 A Few Results Based on Transformation Groups of M Exercise (1.3) Hints to Exercise (1.3) 4. The Two-Dimensional Conformal Field Theory 4.1 Conformal Group 60 4.2 Light-cone Formalism and the Lorentz Group 4.3 Euclidean Space Formalism 4.4 Two-dimensional Conformal Group 4.5 M6bius Transformation 4.6 Conformal Tensor Calculus 4.7 Conserved Currents Exercise (1.4) Hints to Exercise (1.4) References Chapter 2. Elements of Group Theory and Group Representations 1. Introduction 1.1 Definition of a Group, Examples, and Conjugate Classes 1.2 Invariant Subgroups, Factor Groups, Simple and Semi-simple Groups 1.3 Products of Groups and Homomorphism 2. Lie Groups and Topological Groups 2.1 Topological Groups 2.2 Algebraic Groups Chapter 3 A Primer on Operators Chapter 4 Basics of Algebras and Related Concepts Chapter 5 Infinite-Dimensional Algebras Chapter 6 The Role of Symmetry in Physics and Mathematics Chapter 7 All That's Super-An Introduction Chapter 8 Gravitation, Relativity and Black Holes Chapter 9 Basics of Quantum Theory Chapter 10 Theory of Yang-Mills and The Yang-Mills-Higgs Mechanism Chapter 11 Strings and Superstrings (Elementary Aspects) Symbols Index

<<理论物理学数学透视>>

版权说明

本站所提供下载的PDF图书仅提供预览和简介，请支持正版图书。

更多资源请访问:<http://www.tushu007.com>