

RELATIVISTIC QUANTUM MECHANICS

An Introduction to Relativistic Quantum Fields



Luciano Maiani and Omar Benhar





CRC Press

Relativistic Quantum Mechanics And Introduction To Field Theory

S. S. Schweber

Relativistic Quantum Mechanics And Introduction To Field Theory:

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the text and problems at the end of most chapters the book is ideal for advanced undergraduate and graduate students in theoretical physics Relativistic Quantum Mechanics Luciano Maiani, Omar Benhar, 2015-11-18 Written by two of the most prominent leaders in particle physics Relativistic Quantum Mechanics An Introduction to Relativistic Quantum Fields provides a classroom tested introduction to the formal and conceptual foundations of quantum field theory Designed for advanced undergraduate and graduate level physics students the text only requires p **Relativistic Quantum Mechanics** and Field Theory Franz Gross, 2008-07-11 An accessible comprehensive reference to modern quantum mechanics and field theory In surveying available books on advanced quantum mechanics and field theory Franz Gross determined that while established books were outdated newer titles tended to focus on recent developments and disregard the basics Relativistic Quantum Mechanics and Field Theory fills this striking gap in the field With a strong emphasis on applications to practical problems as well as calculations Dr Gross provides complete up to date coverage of both elementary and advanced topics essential for a well rounded understanding of the field Developing the material at a level accessible even to newcomers to quantum mechanics the book begins with topics that every physicist should know quantization of the electromagnetic field relativistic one body wave equations and the theoretical explanation of atomic decay Subsequent chapters prepare readers for advanced work covering such major topics as gauge theories path integral techniques spontaneous symmetry breaking and an introduction to QCD chiral symmetry and the Standard Model A special chapter is devoted to relativistic bound state wave equations an important topic that is often overlooked in other books Clear and concise throughout Relativistic Quantum Mechanics and Field Theory boasts examples from atomic and nuclear physics as well as particle physics and includes appendices with background material It is an essential reference for anyone working in quantum mechanics today

Relativistic Quantum Mechanics Luciano Maiani,Omar Benhar,2024 Written by two of the most prominent leaders in particle physics Relativistic Quantum Mechanics An Introduction to Relativistic Quantum Fields provides a classroom tested introduction to the formal and conceptual foundations of quantum field theory Designed for advanced undergraduate and graduate level physics students the text only requires previous courses in classical mechanics relativity and quantum mechanics. The introductory chapters of the book summarise the theory of special relativity and its application to the classical description of the motion of a free particle and a field. The authors then explain the quantum formulation of field theory through the simple example of a scalar field described by the Klein Gordon equation as well as its extension to the case of spin particles described by the Dirac equation. They also present the elements necessary for constructing the foundational theories of the standard model of electroweak interactions namely quantum electrodynamics and the Fermi theory of neutron beta decay Many applications to quantum electrodynamics and weak interaction processes are thoroughly analysed. The book also explores the timely topic of neutrino oscillations Logically progressing from the fundamentals to recent discoveries this textbook provides students with the essential foundation to study more advanced theoretical physics and elementary particle

physics It will help them understand the theory of electroweak interactions and gauge theories

Introduction to Gauge Field Theory Revised Edition D. Bailin, Alexander Love, 1993-01-01 Introduction to Gauge Field Theory provides comprehensive coverage of modern relativistic quantum field theory emphasizing the details of actual calculations rather than the phenomenology of the applications Forming a foundation in the subject the book assumes knowledge of relativistic quantum mechanics but not of quantum field theory The book is ideal for graduate students advanced undergraduates and researchers in the field of particle physics

Relativistic Quantum Mechanics and Quantum Fields Ta-you Wu,W.-Y. Pauchy Hwang, 1991 A sequel to the well received book Quantum Mechanics by T Y Wu this book carries on where the earlier volume ends This present volume follows the generally pedagogic style of Quantum Mechanics The scope ranges from relativistic quantum mechanics to an introduction to quantum field theory with quantum electrodynamics as the basic example and ends with an exposition of important issues related to the standard model The book presents the subject in basic and easy to grasp notions which will enhance the purpose of this book as a useful textbook in the area of relativistic quantum mechanics and quantum electrodynamics

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