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Introduction To Elementary Particles





Synopsis

In the second, revised edition of a well-established textbook, the author strikes a balance between quantitative rigor and intuitive understanding, using a lively, informal style. The first chapter provides a detailed historical introduction to the subject, while subsequent chapters offer a quantitative presentation of the Standard Model. A simplified introduction to the Feynman rules, based on a "toy" model, helps readers learn the calculational techniques without the complications of spin. It is followed by accessible treatments of quantum electrodynamics, the strong and weak interactions, and gauge theories. New chapters address neutrino oscillations and prospects for physics beyond the Standard Model. The book contains a number of worked examples and many end-of-chapter problems. A complete solution manual is available for instructors.

Book Information

Paperback: 470 pages Publisher: Wiley-VCH; 2nd edition (October 13, 2008) Language: English ISBN-10: 3527406018 ISBN-13: 978-3527406012 Product Dimensions: 6.8 x 1 x 9.5 inches Shipping Weight: 2 pounds (View shipping rates and policies) Average Customer Review: 4.6 out of 5 stars Â See all reviews (50 customer reviews) Best Sellers Rank: #34,398 in Books (See Top 100 in Books) #3 in Books > Science & Math > Physics > Nuclear Physics > Particle Physics #88 in Books > Textbooks > Science & Mathematics > Physics #106 in Books > Engineering & Transportation > Engineering > Reference

Customer Reviews

This is the absolute must for the beginner high energy student, theorist or experimentalist , graduate or undergraduate. This should be your first book on the subject. Anything else is too hard or too naive. This is the book that will take you by the hand, do the calculations, show you the history of the subject and tell you what is important and what is not, in short show you what high energy physics is all about. It has the ultimate material and structure. If you dont know what a quark is or why people keep talking about its color, or you have never seen Dirac's equation, or you have no idea about what a cross section may be or how to solve problems in relativistic kinematics, THIS BOOK will take you by hand, teach you and care for you. If your friends tell you how cool a Feynman diagram

is but you have never seen one and would like to understand what it is, what is its meaning and how to calculate one, then this book will take you by the hand and explain it to you. It will open the secret gardens of particle physics in front of your eyes. It is full with great physical intuition, not just mathematics all over the place. And after you feel comfortable with the first shock of the Feynman diagrams and the Dirac equation and Electrodynamics, then you can sail away to the second part of the book that covers Quantum Chromodynamics, weak interactions and gauge theories. Then and only then make the jump to the more "difficult" books. You can read this book on your own, you dont need a professor or a course. Griffiths is there. He knows your questions and answers them beforehand (like Mandl). He is such a great pedagogist. Dear fellow student of high energy physics, take my word and at least take a look at the book in your library.

This is possibly the best textbook on any subject that I have ever read. And when I say read I mean cover to cover, several times! (The book is now so shabby and food stained that I'm thinking of buying another copy.) The previous reviews have said it all but I want to summarize some guick points.1. The footnotes and references are in a class of their own. You MUST read them to get full value. They contain a wealth of critical information.2. The narrative style and method of explanation in this book makes me feel as though David Griffith is talking one-on-one to me alone. In my opinion he is peerless as a teacher!3. The ability of this text to present some of the most complex mathematical material in an a simple, accessible and meaningful way using ordinary, jargon free language is just amazing. Of course particle physics is never going to be simple in laymen's terms but the ability to simplify the difficult ideas it contains as much as possible is critical for a student.4. The ability of David Griffiths to make the subject - even at its most formal and driest points - exciting and alive is a rare and special skill.5. The problems posed at the end of each section are the gateway to true understanding. They are clear, practical, have a definite educational purpose and are often fun to solve as well.5. If you are affiliated with a university or other teaching institution and can get hold of the Solutions Manual, you MUST do so. It is a gem in itself and an essential part of the total "David Griffiths" experience. Although this book is an absolute must if you are studying the subject and even if you are merely interested in it, there are a couple of minor guibbles that I need to bring to your attention.

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