<<标准模型动力学>>

图书基本信息

书名：<<标准模型动力学>>

13位ISBN编号：9787506292238

10位ISBN编号：7506292238

出版时间：2008-8

出版时间：世界图书出版公司

作者：（美）多诺霍 著

页数：540

<<标准模型动力学>>

前言

The Standard Model lagrangian LSM embodies our knowledge of the strong and electroweak interactions. It contains as fundamental degrees of freedom the spin one-half quarks and leptons, the spin one gauge bosom,and the spin zero Higgs fields. Symmetry plays the central role in determining its dynamical structure. The lagrangian exhibits invariance under SU（3） gauge transformations for the strong interactions and under SU（2） x U（1） gauge transformations for the electroweak interactions.Despite the presence of （all too） many input parameters, it is a mathematical construction of considerable predictive power.There are several books available which describe in detail the construction of LSM and its quantization, and which deal with aspects of symmetry breaking. We felt the need for a book describing the next steps, how LSM is connected to the observable physics of the real world. There are a considerable variety of techniques, of differing rigor, which are used by particle physicists to accomplish this. We present here those which have become indispensable tools. In addition, we attempt to convey the insights and 'conventional wisdom' which have been developed throughout the field. This book can only be an introduction to the riches contained in the subject, hopefully providing a foundation and a motivation for further exploration by its readers.

<<标准模型动力学>>

内容概要

This book describes the practical techniques for connecting the phenomenology of particle physics with the accepted modern theory known as the 'Standard Model'. The Standard Model of elementary particle interactions is the outstanding achievement of the past forty years of experimental and theoretical activity in particle physics. This book gives a detailed account of the Standard Model, focussing on the techniques by which the model can produce information about real observed phenomena. The text opens with a pedagogic account of the theory of the Standard Model. Introductions to the essential calculation techniques needed, including effective lagrangian techniques and path integral methods, are included. The major part of the text is concerned with the use of the Standard Model in the calculation of physical properties of particles. Rigorous and reliable methods (radiative corrections and nonperturbative techniques based on symmetries and anomalies) are emphasized, but other useful models (such as the quark and Skyrme models) are also described. The strong and electroweak interactions are not treated as independent threads, but rather are woven together into a unified phenomenological fabric. Manyexercises and diagrams are included.

作者简介

John Donoghue，美国马萨诸塞州大学物理系教授。
1976年在马萨诸塞大学获得博士学位。
主要研究领域有粒子物理学，广义相对论，有效场论和宇宙论。
Eugene Golowich，美国马萨诸塞州大学物理系教授。
1965年在康乃尔大学获得理论物理博士学位。
主要研究领域是高能物理。
Barry Holstein，美国马萨诸塞州大学物理系教授。
1969年在卡内基-梅隆大学获得博士学位。
主要研究领域是高能物理。

<<标准模型动力学>>

书籍目录

章节摘录

插图：

<<标准模型动力学>>

编辑推荐

《标准模型动力学(英文影印版)》是“剑桥粒子物理、核物理和宇宙论系列丛书”中的第二本，可作为从事该领域工作的科研人员的参考资料和研究生粒子物理课程的教学用书。

<<标准模型动力学>>

版权说明