

<<Caught by disorder无序>>

图书基本信息

书名：<<Caught by disorder无序介质的束缚态>>

13位ISBN编号：9780817642105

10位ISBN编号：0817642102

出版时间：2001-6

作者：Stollmann, Peter

页数：166

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>

<<Caught by disorder无序>>

内容概要

The study of disorder has generated enormous research activity in mathematics and physics. Over the past 15 years various aspects of the subject have changed a number of paradigms and have inspired the discovery of deep mathematical techniques to deal with complex problems arising from the effects of disorder. One important effect is a phenomenon called localization, which describes the very strange behavior of waves in random media---the fact that waves, instead of traveling through space as they do in ordered environments, stay in a confined region (caught by disorder). To date, there is no treatment of this subject in monograph or textbook form. This book fills that gap. Caught by Disorder presents: * an introduction to disorder that can be grasped by graduate students in a hands-on way * a concise, mathematically rigorous examination of some particular models of disordered systems * a detailed application of the localization phenomenon, worked out in two typical model classes that keep the technicalities at a reasonable level * a thorough examination of new mathematical machinery, in particular, the method of multiscale analysis * a number of key unsolved problems * an appendix containing the prerequisites of operator theory, as well as other proofs * examples, illustrations, comprehensive bibliography, author and keyword index Mathematical background for this book requires only a knowledge of partial differential equations, functional analysis---mainly operator theory and spectral theory---and elementary probability theory. The work is an excellent text for a graduate course or seminar in mathematical physics or serves as a standard reference for specialists.

书籍目录

Introduction 1 Getting Started 1.1 Bound states versus extended states 1.2 Ergodic operator families 1.3 Some important examples 1.4 Our basic models (P+A) and (DIV) 1.5 Localization and Lifshitz tails: the heuristic picture 2 Analysis of Anderson-type Models 2.1 Lifshitz tails for (P+A) 2.2 Initial length scale estimates 2.3 Wegner estimates 2.4 Combes-Thomas estimates 2.5 Changing cubes 3 Multiscale Analysis 3.1 Idea of the proof and historical notes 3.2 Multiscale Analysis 3.3 Exponential localization 3.4 Dynamical localization 3.5 More models 4 Appendix 4.1 A short story of selfadjoint operators 4.1.1 Welcome to Hilbert space 4.1.2 Selfadjoint operators and forms 4.1.3 Schrodinger operators 4.1.4 Spectra and the Spectral Theorem 4.1.5 Spectral Types and the RAGE theorem 4.1.6 Sectorial forms and form-bounded perturbations 4.1.7 The rain-max principle 4.1.8 Weyl asymptotics 4.1.9 Auxiliary results from Sobolev space 4.1.10 Analytic perturbation theory 4.1.11 Generalized eigenfunction expansions 4.2 Some basics from probability theory 4.2.1 Measurable sets and random variables 4.2.2 Measure and probability 4.2.3 Independence 4.2.4 Product measures 4.2.5 Ergodicity 4.2.6 Monotone class arguments 5 AftermathReferencesAuthor IndexSubject Index

<<Caught by disorder无序>>

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>