

1. Record Nr.	UNINA9910257392203321
Titolo	Anderson Localization and Its Ramifications : Disorder, Phase Coherence, and Electron Correlations // edited by Tobias Brandes, Stefan Kettmann
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2003
ISBN	3-540-45202-8
Edizione	[1st ed. 2003.]
Descrizione fisica	1 online resource (XII, 315 p. 10 illus., 3 illus. in color.)
Collana	Lecture Notes in Physics, , 0075-8450 ; ; 630
Disciplina	530.4/1
Soggetti	Condensed matter Quantum theory Condensed Matter Physics Quantum Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Scaling at the Anderson Transition: A Historical Review -- Transfer Matrices and Finite Size Scaling for the Metal Insulator Transition -- New Aspects of the Single Parameter Scaling -- Transfer Matrices for the Anderson Transition: 20 Years Later -- A Self-Consistent Theory of the Anderson Transition -- Conductance Statistics Near the Anderson Transition -- Quantum Hall-Insulator Transition -- Experimental Tests of Scaling in the Quantum Hall Effect -- Localization of Acoustic Waves in Composite Structures -- Light in Disordered Dielectrics -- Disordered Systems in Phase Space -- Localization in the Presence of Chiral Symmetry -- Phase-Coherent Transport in Hybrid Nanostructures -- Quantum Tunneling of an Acoustic Polaron -- Phase Coherence in Quantum Information Systems -- Electron Correlation - An Odyssey from 1D to 3D -- From Independent Particle Towards Collective Motion in Two Dimensions -- Insulating-Non-Insulating Transitions in Granular and Disordered Metals at not Very Low Temperatures -- Electrons in Quantum Dots -- AC-Driven Localization in a Two-Electron Quantum Dot Molecule -- Spin Blockades in the Transport Through Quantum Dots.

The phenomenon of localization of the electronic wave function in a random medium can be regarded as the key manifestation of quantum coherence in a condensed matter system. As one of the most remarkable phenomena in condensed matter physics discovered in the 20th century, the localization problem is an indispensable part of the theory of the quantum Hall effects and rivals superconductivity in its significance as a manifestation of quantum coherence at a macroscopic scale. The present volume, written by some of the leading experts in the field, is intended to highlight some of the recent progress in the field of localization, with particular emphasis on the effect of interactions on quantum coherence. The chapters are written in textbook style and should serve as a reliable and thorough introduction for advanced students or researchers already working in the field of mesoscopic physics.
