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Quasi-One-Dimensional Systems

Chapter 6 The Localization-Delocalization Transition

6.1 Finite Size Scaling ; 6.2 Real-Space Renormalization ; 6.3 Multifractality of Critical States ; 6.4 Point-Contact Conductance ; 6.5 Order Parameter and Scaling Variable ; Bibliography ; Index

Sommario/riassunto

The quantum phenomena of tunneling and interference show up not only in the microscopic world of atoms and molecules, but also in cold materials of the real world, such as metals and semiconductors. Though not fully macroscopic, such mesoscopic systems contain a huge number of particles, and the holistic nature of quantum mechanics becomes evident already in simple electronic measurements. The measured quantity fluctuates as a function of applied fields in an unpredictable, yet reproducible way. Despite this fingerprint character of fluctuations, their statistical properties are univer