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| Nota di contenuto | Preface: A Description of Contents; Acknowledgments; Contents; 1. Introduction: A Summary of Mathematical and Physical Background for One-Particle Quantum Mechanics; 2. Spreading and Asymptotic Decay of Free Wave Packets: The Method of Stationary Phase and van der Corput's Approach; 3. The Relation Between Time-Like Decay and Spectral Properties; 3.1 Decay on the Average Sense; 3.1.1 Preliminaries: Wiener's, RAGE and Weyl theorems; 3.1.2 Models of exotic spectra, quantum KAM theorems and Howland's theorem<br>3.1.3 UH measures and decay on the average: Strichartz-Last theorem and Guarneri-Last-Combes theorem3.2 Decay in the Lp-Sense; 3.2.1 Relation between decay in the Lp-sense and decay on the average sense; 3.2.2 Decay on the Lp-sense and absolute continuity; 3.2.3 Sojourn time, Sinha's theorem and time-energy uncertainty relation; 3.3 PointwiseDecay; 3.3.1 Does decay in the Lp-sense and/or absolute continuity imply pointwise decay?; 3.3.2 Rajchman measures, and the connection between ergodic theory, number theory and analysis; 3.3.3 Fourier dimension, Salem sets and Salem's method<br>3.4 Quantum Dynamical Stability4. Time Decay for a Class of Models with Sparse Potentials; 4.1 Spectral Transition for Sparse Models in d = |

Sommario/riassunto

Time decays form the basis of a multitude of important and interesting phenomena in quantum physics that range from spectral properties, resonances, return and approach to equilibrium, to quantum mixing, dynamical stability properties and irreversibility and the "arrow of time".This monograph is devoted to a clear and precise, yet pedagogical account of the associated concepts and methods.