1. Record Nr. UNINA9910964525003321

Autore	Razavy Mohsen
Titolo	Heisenberg's Quantum Mechanics
Pubbl/distr/stampa	Singapore, : World Scientific Publishing Company, 2011
ISBN	9786613148391 9781283148399 1283148390 9789814304122 9814304123
Edizione	[1st ed.]
Descrizione fisica	1 online resource (678 p.)
Disciplina	530.12
Soggetti	Cosmic physics Cosmology Quantum theory Physics Physical Sciences & Mathematics Atomic Physics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Preface; Contents; 1 A Brief Survey of Analytical Dynamics; 2 Discovery of Matrix Mechanics; 3 Mathematical Preliminaries; 4 Postulates of Quantum Theory; 5 Equations of Motion, Hamiltonian Operator and the Commutation Relations; 6 Symmetries and Conservation Laws; 7 Bound State Energies for One-Dimensional Problems; 8 Exactly Solvable Potentials, Supersymmetry and Shape Invariance; 9 The Two-Body Problem; 10 Methods of Integration of Heisenberg's Equations of Motion; 11 Perturbation Theory; 12 Other Methods of Approximation 13 Quantization of the Classical Equations of Motion with Higher Derivatives14 Potential Scattering; 15 Quantum Diffraction; 16 Motion of a Charged Particle in Electromagnetic Field and Topological Quantum Effects for Neutral Particles; 17 Quantum Many-Body Problem; 18 Quantum Theory of Free Electromagnetic Field; 19 Interaction of Radiation with Matter; 20 Bell's Inequality; Index

Sommario/riassunto

This book provides a detailed account of quantum theory with a much greater emphasis on the Heisenberg equations of motion and the matrix method. No other texts have come close to discuss quantum theory in terms of depth of coverage. The book features a deeper treatment of the fundamental concepts such as the rules of constructing quantum mechanical operators and the classical-quantal correspondence; the exact and approximate methods based on the Heisenberg equations; the determinantal approach to the scattering theory and the LSZ reduction formalism where the latter method is used to obtain t