An Introduction to Quantum Theory (Hardback)

By F. S. Levin

CAMBRIDGE UNIVERSITY PRESS, United Kingdom, 2014. Hardback. Book Condition: New. 258 x 184 mm. Language: English . Brand New Book ***** Print on Demand *****.Underpinning the axiomatic formulation of quantum theory presented in this undergraduate textbook is a review of early experiments, a comparison of classical and quantal terminology, a Schroedinger-equation treatment of the one-dimensional quantum box, and a survey of relevant mathematics. Among the many concepts comprehensively discussed are: operators; state vectors and wave functions; experimental observables; classical/quantal connections; and symmetry properties. The theory is applied to a wide variety of systems including the non-relativistic H-atom, external electromagnetic fields, and spin1/2. Collisions are described using wave packets. Various time-dependent and time-independent approximations are discussed; applications include electromagnetic transition rates and corrections to the H-atom energies. The final chapter deals with identical-particle symmetries and their application to the He atom, the Periodic Table and diatomic molecules. There are also brief treatments of advanced subjects such as gauge invariance and hidden variables.

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