Título: Elementary Quantum Mechanics. Expanded Edition

Autor: Fong, Peter

Precio: $854.00

Editorial:

Año: 2005

Tema:

Edición: 1ª

Sinopsis

ISBN: 9789812563514

Quantum mechanics is a difficult subject for students to learn after years of rigorous training in classical physics. In quantum mechanics they have to abandon what they have laboriously learned and adopt a new system of thinking.

In the previous edition of this book, the author reformulated classical mechanics as a classical theory with an undetermined constant. As the constant approaches zero the theory reduces to Newton's exactly, but when set equal to the Planck constant the theory reduces to the Schrödinger representation of quantum mechanics. Thus the new theory, at least in its mathematical form, can be learned without ramifications and complexity. Over the years, the book has shepherded the growth of a generation of physicists.

In this expanded edition, a similar trick is applied to introduce matrix mechanics. The matrix formulation presented allows quantum theory to be generalized to new physical systems such as electron spin, which cannot be done by the Schrödinger approach.

The result is a textbook which promises to provide a future generation of students a clear, usable and authoritative resource to study the fundamentals of quantum mechanics. Twenty new problems are added to existing chapters.

Contents:
Historical Introduction
The Schrödinger Equation and Its Mathematical Implications
The Free Particle
The Linear Harmonic Oscillator
One-Dimensional Potential Barrier Problems
The Physical Meaning of Quantum Mechanics
General Methods for One-Dimensional Problems
Three-Dimensional Problems

The Three-Dimensional Harmonic Oscillator
Time-Independent Perturbation Theory
Time-Dependent Perturbation Theory
General Formulation of Quantum Mechanics and Its Applications
Matrix Mechanics