

Book Review

Quantum Mechanics upon Theorems

Author: Fu-sui Liu (Department of Physics, Beijing University, Beijing, China)

This book as a textbook and reference book has the following prominent features, which many textbooks do not have:

1) Profound and easy-to-understand.

For example, although the wave-particle duality is an important concept, nobody can really give its physical picture, and give theoretical demonstration. However, one theorem and one corollary demonstrate what the physical picture of the wave-particle duality has to be.

2) Self-contained.

The chapter 2 of this textbook gives the necessary knowledge on classical analytical mechanics and mathematics.

3) The statements on necessary history of physics.

In terms of a series of interesting stories in the processes of development of quantum mechanics, this textbook emphasizes some experiences and lessons which are worth to note for the future development of the physics.

4) The strictness in mathematics.

Rather than ordinary axiomatic approach, this textbook proves 52 theorems and 12 corollaries, and thus establishes the quantum mechanics upon demonstrations. Based on the proved theorem of watershed between classical and quantum physics, this textbook solves with confidence the contradiction between quantum mechanics and general theory of relativity. This contradiction is thought as a 21 century difficult problem in physics.

This textbook is appropriate for both students and beginners, and Doctors and physicists due to the strictly theoretical demonstrations. I strongly recommend to publish this book.

Review provided by Chongyu Wang, Department of Physics, Tsinghua University, Member of the Chinese Academy of Sciences