

Book Review

Quantum Mechanics Upon Theorems

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I think that "Quantum Mechanics upon Theorem" makes quantum mechanics at the first time to go from postulates to demonstrations. Although the history of quantum physics is more than 100 years, it is a big regret that until now all its basic concepts and pictures, such as uncertainty relation, wave-particle duality, operator representation, still stop at stage of postulates, and thus the basis of quantum mechanics is not very firm. Due to the lack of exact demonstrations for the basic concepts, equation, and pictures, many concepts and viewpoints, such as quantum measurement, wave function collapse, environment disturbance of decoherence, hidden parameter, quantum potential, ensemble explanation of wave function, many-world, enter into quantum mechanics, all make the quantum mechanics complicated. "Quantum Mechanics upon Theorems" lays a foundation of quantum mechanics on 68 theorems and corollaries, thus will be of help to clarify some misunderstanding.

The basic concepts and pictures of quantum mechanics in this textbook are easy to understand due to using the mathematical and analytical mechanics methods, the concepts, pictures, and equations, are self-contained.

I strongly recommend taking this textbook as a teaching reference for all students and beginners, who need to learn even very basic quantum mechanics, around our world. I also sincerely hope that physicists, chemists, mathematicians, engineers, and philosophers read this textbook. Everybody who reads this textbook will have an interesting discovery.

Reviewed by Wei-xin Zhang, Professor, Academician of Chinese Engineering Academy