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Titolo	Quantum Mechanics : A Concise Introduction // Biao Wu ; translated by Ying Hu
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ISBN	981-19-7626-0
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (197 pages)
Disciplina	004.1
Soggetti	Quantum computers Quantum theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Chapter 1. What is quantum? -- Chapter 2. Brief history of quantum mechanics -- Chapter 3. Classical mechanics and old quantum theories -- Chapter 4. Complex number and linear algebra -- Chapter 5. Quantum entanglement and Bell's inequality -- Chapter 6. Quantum measurement -- Chapter 7. Quantum computing -- Chapter 8. Quantum communications.
Sommario/riassunto	This textbook highlights a concise introduction to quantum mechanics in a readable and serious manner. Being readable, the book intends to present the beauty and magic of quantum mechanics to the mass public. Being serious, the book uses mathematics to describe the most profound results in quantum mechanics. To balance the two, the book assumes that the readers are familiar with high-school mathematics and instructs the least possible advanced mathematics necessary for the understanding of quantum mechanics. The book first covers the history of quantum mechanics and then introduces the magical quantum world, including quantum states living in Hilbert space, indistinguishable particles, linear superposition, Heisenberg's uncertainty relations, quantum entanglement, Bell's inequality, quantum energy levels, Schrödinger's cat and many-worlds theory, etc. To compare with classic physics, the book also covers the classic mechanics before introducing quantum mechanics. At last, the book briefly covers quantum computing and quantum communications.

Besides readers of other majors, the book is also a good reference for students in physics. It helps physics students to develop a solid understanding of the basics of quantum mechanics, preventing them from getting lost in solving the Schrödinger equation. The book also discusses quantum entanglement and quantum information which traditional quantum mechanics textbooks do not cover. The Foreword is written by Frank Wilczek, Nobel Laureate in physics, 2004.
