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ISBN	981-15-2471-8
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Descrizione fisica	1 online resource (XVII, 265 p. 28 illus., 7 illus. in color.)
Collana	Undergraduate Lecture Notes in Physics, , 2192-4791
Disciplina	006.3843
Soggetti	Quantum computers Algorithms Mechanics Quantum theory Quantum field theory String models Fourier analysis Quantum Computing Classical Mechanics Quantum Physics Quantum Field Theories, String Theory Fourier Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1. Quantum Cryptography & Quantum Teleportation -- 2. A Quick Comparison of Quantum & Classical Mechanics -- 3. The Birth and Coming of Age of Quantum Mechanics -- 4. Laws of Quantum Mechanics -- 5. Weirdness of Quantum Mechanics -- 6. Mathematical Elements Needed to Compute -- 7. Some Mathematical Consequences of the Postulates -- 8. Waves and Fourier Analysis -- 9. Getting the Hang of Measurement -- 10. Quantum Gates -- 11. Unusual Solutions of Usual Problems -- 12. Fundamental Limits to Computing -- 13. The Crown Jewels among Quantum Algorithms -- 14. Quantum Error Corrections -- 15. Time-Multiplexed Interpretation of Measurement -- 16. Quantum Computing and Social Responsibility.
Sommario/riassunto	This book discusses the application of quantum mechanics to

computing. It explains the fundamental concepts of quantum mechanics and then goes on to discuss various elements of mathematics required for quantum computing. Quantum cryptography, waves and Fourier analysis, measuring quantum systems, comparison to classical mechanics, quantum gates, and important algorithms in quantum computing are among the topics covered. The book offers a valuable resource for graduate and senior undergraduate students in STEM (science, technology, engineering, and mathematics) fields with an interest in designing quantum algorithms. Readers are expected to have a firm grasp of linear algebra and some familiarity with Fourier analysis. .
