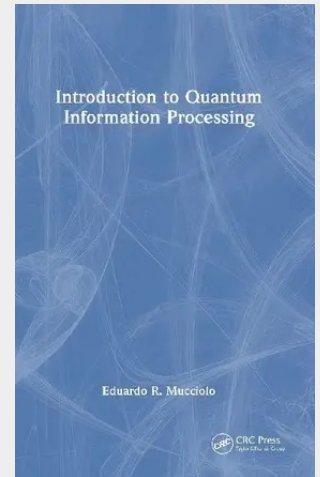


Introduction to Quantum Information Processing

This book introduces quantum computing and quantum communications at the undergraduate level for students in the physical sciences, engineering, and mathematics, assuming no prior knowledge of quantum mechanics. It is a self-contained guide assuming only that the reader is familiar with physics at the college level, calculus (up to and including ordinary differential equations), and some matrix algebra and complex numbers. The book brings the reader up to speed with fundamental concepts in quantum information processing and builds a working knowledge of basic quantum algorithms, quantum error correction, and quantum communication protocols. It covers various models of quantum computation and some of the most common physical realizations of qubits. There is a good number of practice problems and exercises that rely on computer programming with the Qiskit language. The book can be used to prepare students of physics, mathematics, electrical and computer engineering, computer science, optics and photonics, and mathematics for internships and research experiences in quantum information processing, both during and after their undergraduate studies. It also helps those who plan to apply to graduate school and do research in this area. Key Features: - Self-contained coverage of quantum computing and quantum communications, from the motivations to the fundamentals and applications, including key concepts and contemporary topics. - Contains practice problems and exercises, including some that require programming in Qiskit (the python-based, high-level language for programming quantum computers, adopted by nearly all quantum hardware providers and completely open source). - Very light background knowledge assumed, making this book accessible to a variety of majors in the natural sciences, engineering, and mathematics.

**168,60 €**

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