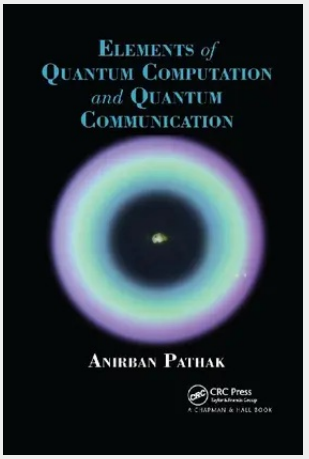
Pathak

Elements of Quantum Computation and Quantum Communication



While there are many available textbooks on quantum information theory, most are either too technical for beginners or not complete enough. Filling this gap, Elements of Quantum Computation and Quantum Communication gives a clear, self-contained introduction to quantum computation and communication. Written primarily for undergraduate students in physics, mathematics, computer science, and related disciplines, this introductory text is also suitable for researchers interested in quantum computation and communication. Developed from the author's lecture notes, the text begins with developing a perception of classical and quantum information and chronicling the history of quantum computation and communication. It then covers classical and quantum Turing machines, error correction, the quantum circuit model of computation, and complexity classes relevant to quantum computing and cryptography. After presenting mathematical techniques frequently used in quantum information theory and some basic ideas from quantum mechanics, the author describes quantum gates, circuits, algorithms, and error-correcting codes. He also explores the significance and applications of two unique quantum communication schemes: quantum teleportation and superdense coding. The book concludes with various aspects of quantum cryptography. Exploring recent developments and open questions in the field, this text prepares readers for further study and helps them understand more advanced texts and journal papers. Along with thought-provoking cartoons and brief biographies of key players in the field, each chapter includes examples, references, exercises, and problems with detailed solutions.

While there are many available textbooks on quantum information theory, most are either too technical for beginners or not complete enough. Filling the gap, this book gives a clear, self-contained introduction to quantum computation and communication. Exploring recent developments and open questions in the field, it prepares readers for further study and helps them understand more advanced texts and journal papers. Along with thought-provoking cartoons and brief biographies of key players in the field, each chapter includes examples, references, exercises, and problems with detailed solutions.

132,80 €
132,80 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9780367379872
Medium: Buch
ISBN: 978-0-367-37987-2
Verlag: CRC Press
Erscheinungstermin: 19.09.2019
Sprache(n): Englisch
Auflage: 1. Auflage 2019
Produktform: Kartoniert
Gewicht: 521 g
Seiten: 340
Format (B x H): 156 x 234 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)