

<<量子计算机概论INTRODUCTION>>

图书基本信息

书名：<<量子计算机概论INTRODUCTION TO QUANTUM COMPUTERS>>

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内容概要

Quantum computing promises to solve problems which are intractable on digital computers. Highly parallel quantum algorithms can decrease the computational time for some problems by many orders of magnitude. This important book explains how quantum computers can do these amazing things. Several algorithms are illustrated: the discrete Fourier transform, Shor's algorithm for prime factorization; algorithms for quantum logic gates; physical implementations of quantum logic gates in ion traps and in spin chains; the simplest schemes for quantum error correction; correction of errors caused by imperfect resonant pulses; correction of errors caused by the nonresonant actions of a pulse; and numerical simulations of dynamical behavior of the quantum Control-Not gate. An overview of some basic elements of computer science is presented, including the Turing machine, Boolean algebra, and logic gates. The required quantum ideas are explained. --This text refers to the Hardcover edition.

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