



Modelling and Design of Quantum Cellular Automata Circuits

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Condition: New. Publisher/Verlag: LAP Lambert Academic Publishing | This book presents the theoretical results achieved in the investigation of Quantum cellular automata concept (QCA). QCA is a novel approach to prove Logical Computation in Nano scale. Elementary QCA circuits to FPGA QCA Circuits are designed and studied their operation at Cryogenic temperature. Different types of Modeling like Statistical, Probability based, Genetic Algorithm and finally Neural network are studied on these QCA Circuits to explain about the concept of Low power, Operation at Nanolevel and Optimization of Power for given input conditions. Also discussed the analysis of Power dissipation of QCA circuits. These study will help to know reduce and study the error occurrence in Nano circuits. Reliability Analysis also performed on some of the QCA circuits to study about the Fault Tolerance and error-less operation at Nanoscale. FPGA and PLA's QCA Circuits are Constructed and studied their operation performance using Modelling and simulation. Finally QCA circuits are Compared with the Present CMOS Circuits and QCA circuit Applications are discussed in detail. | Format: Paperback | Language/Sprache: english | 284 pp.



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