INTRODUCTION TO QUANTUM COMPUTATION

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Abstract

Quantum computers are believed to perform some computations, such as factoring large composite numbers, exponentially faster than classical computers. In this talk I will introduce the concepts of quantum computation. Topics to be discussed include how qubits supplant bits, quantum gates and circuits, simple quantum algorithms, quantum error correction, and the requirements for physical implementation of a quantum computer.

Key Words: Quantum computation, qubit, quantum circuit, quantum error correction