Invited talk

Quantum Computers and Raising Schrödinger's Cat

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Two energy levels of an atom can represent a binary bit of information. Quantum systems can also exist in "superposition states", storing both states of the bit simultaneously, a quantum bit or "qubit." N qubits could store 2^N binary numbers yielding an exponential increase in memory and processing capacity. Qubit operations with trapped atomic ions are described, and could eventually lead to an analog of Schrödinger's famous cat.