

The hybrid quantum circuits with trapped electrons

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Abstract

Electrons trapped in a vacuum by a Paul trap have the wonderful features of a quantum system: fast operation, isolation from the environment, and a perfect two-level system. It is also possible to efficiently connect the different traps using superconducting wires. The electron Paul traps have recently been reported in room temperature system. On the other hand, the floating electrons have no internal degrees of freedom to interact with light, and cannot be controlled like ion trap systems, and have not yet been cooled to the ground state. In this talk, we will introduce our efforts to realize the electron Paul trap quantum system.
