

Abstract Submitted
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Quantum Logic Gates for Coupled Superconducting Resonators

FREDERICK STRAUCH, Williams College — Superconducting resonators are a promising element for many applications in quantum information processing, such as memory, state transfer, and qubit-qubit coupling. Here I introduce a new application—multi-level quantum logic using superpositions of Fock states. A circuit-QED implementation of single and coupled-resonator gates will be presented and theoretically analyzed. This scheme, using experimentally demonstrated interactions, will be compared with traditional qubit operations.

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