

Abstract Submitted
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Controlled-NOT logic gate based on conditional spectroscopy

MICHAEL GELLER, JOYDIP GHOSH, University of Georgia, Athens — A controlled-NOT logic gate based on conditional rotation of a target qubit by applying a microwave pulse of appropriate frequency has been demonstrated experimentally for a pair of superconducting flux qubits [Plantenberg et. al., Nature 447, 836 (2007)] . Here we discuss a related construction appropriate for coupled phase qubits or a phase qubit coupled to a resonator. Our results show that an intrinsic fidelity of more than 99% is achievable in about 45ns.

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