

Abstract Submitted  
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**CNOT gate for superconducting qubits biased at their symmetry points** SAHEL ASHHAB, FRANCO NORI, Advanced Science Institute, RIKEN, Wako-shi, Japan, PIETER DE GROOT, KEES HARMANS, HANS MOOIJ, Kavli Institute of Nanoscience, Delft University of Technology, The Netherlands, JÜRGEN LISENFELD, Karlsruhe Institute of Technology, Germany, ADRIAN LUPASCU, Institute for Quantum Computing, University of Waterloo, Canada — A number of different techniques have been proposed and demonstrated in the past few years for implementing two-qubit gates in a system of two coupled superconducting qubits biased at their symmetry points. Most of these techniques implement the iSWAP gate. I will discuss a new technique that implements the CNOT gate. The two qubits are driven at the frequency of the target qubit, and the amplitudes applied to the two qubits are chosen such that the target qubit undergoes Rabi oscillations for only one of the two possible states of the control qubit. As a result a CNOT gate can be implemented.

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