

Abstract Submitted
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Quantum Thermalization between a Superconducting Qubit and Resonator IBRAHIM NSANZINEZA, HELEN PERCIVAL, A. M. VADIRAJ, C.W.S. CHANG, CHRIS WARREN, POL FORN-DAZ, C. M. WILSON, Institute for Quantum Computing, University of Waterloo — Superconducting quantum circuits have emerged as the leading candidate technology for scalable quantum computing. More recently, they have been proposed as a test-bed for quantum thermodynamics, for instance, as a way to explore practical aspects of the design, control and optimization of quantum heat engines. Along these lines, we have designed and fabricated circuits with a transmon qubit coupled to a tunable superconducting coplanar waveguide resonator. The circuit is designed so that we can study quantum thermalization of the qubit, prepared in a mixed state, coupled to the resonator. We will present our preliminary measurements characterizing this process.

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