

Abstract Submitted
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Magnetic Field Effects on High Quality Factor Superconducting Coplanar Resonators ANTHONY MEGRANT, CHARLES NEILL, RAMI BARENDS, YU CHEN, BEN CHIARO, JULIAN KELLY, MATTEO MARIANTONI, JOSH MUTUS, PETER O'MALLEY, DANIEL SANK, AMIT VAINSENER, JAMES WENNER, TED WHITE, DAVID LOW, SHINOBU OHYA, CHRISTOPHER PALMSTROM, JOHN MARTINIS, ANDREW CLELAND, UC Santa Barbara — Superconducting coplanar waveguide resonators have proven to be invaluable tools in studying some of the same decoherence mechanisms as those found in superconducting qubits. Prior improvements in fabrication led to resonator internal quality factors (Q_i 's) in excess of 10 million at high power, enabling us to sensitively probe environmental effects on the resonance frequency and Q_i . We have found these resonators to be very susceptible to applied and stray magnetic fields, with measurable changes in the resonator's Q_i and resonance frequency from fields as small as a few milligauss. I will present more recent measurements of resonators in magnetic fields.

Anthony Megrant
UC Santa Barbara

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