

Abstract Submitted
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Superconducting Resonators with Parasitic Electromagnetic Environments JOHN HORNIBROOK, School of Physics, University of Sydney, 2006, Australia, EMMA MITCHELL, CSIRO Materials Science and Engineering, Lindfield 2070 Australia, DAVID REILLY, School of Physics, University of Sydney, 2006, Australia — Microwave losses in niobium superconducting resonators are investigated at milli-Kelvin temperatures and with low drive power. In addition to the well-known suppression of Q-factor that arises from coupling between the resonator and two-level defects in the dielectric substrate [1-4], we report strong dependence of the loaded Q-factor and resonance line-shape on the electromagnetic environment. Methods to suppress parasitic coupling between the resonator and its environment are demonstrated.

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