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**Inductive Isolation of a Current-Biased Josephson Junction Qubit**
S.K. DUTTA, H. XU, R.C. RAMOS, T.A. PALOMAKI, H. PAIK, R.M. LEWIS, A.J. BERKLEY, J.R. ANDERSON, C.J. LOBB, F.C. WELLSTOOD, University of Maryland — Although the current-biased Josephson junction is a promising qubit candidate, it has the drawback that its bias leads directly connect it to a dissipative environment. With measurements on a Niobium device at 20 mK, we demonstrate the effectiveness of a broadband isolation scheme composed of an inductive divider with an auxiliary detection junction. In addition, by manipulating the state of the asymmetric SQUID that results from the isolation network, we show how the qubit's coupling to its bias leads can be varied, which provides a way of evaluating the importance of this source of dissipation. This work is supported by the Department of Defense, the National Science Foundation, and the Center for Superconductivity Research.

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