Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Gap-engineered quasiparticle traps in the fluxonium artificial atom[1] K. SERNIAK, G. DE LANGE, U. VOOL, M. HAYS, L.D. BURKHART, Y.Y. GAO, C. WANG, K.M. SLIWA, Department of Applied Physics, Yale University, I.M. POP, Department of Applied Physics, Yale University, and Physikalisches Institut, Karlsruhe Institute of Technology, L. FRUNZIO, L.I. GLAZMAN, R.J. SCHOELKOPF, M.H. DEVORET, Department of Applied Physics, Yale University
— Recent experiments have shown that the density of quasiparticles in superconducting quantum circuits exceeds the expected thermal density. In Josephson junction based superconducting qubits, these non-equilibrium quasiparticles can tunnel through the junctions of the circuit, causing decoherence. Quasiparticle traps aim to reduce the density of quasiparticles near the junctions, and therefore the rate of energy loss and dephasing due to tunneling events. These traps must be designed to not introduce any additional losses in the qubit. In this talk we will discuss recent progress in the design and implementation of quasiparticle traps in the fluxonium artificial atom.

[1]Work supported by ARO, ONR, YINQE, and the European Union

Kyle Serniak
Department of Applied Physics, Yale University

Date submitted: 06 Nov 2015 Electronic form version 1.4