

Abstract Submitted  
for the MAR17 Meeting of  
The American Physical Society

**Decoherence mechanisms in a fluxonium qubit** LONG NGUYEN, YEN-HSIANG LIN, NICHOLAS GRABON, JONATHAN SAN MIGUEL, VLADIMIR MANUCHARYAN, University of Maryland, SUPERCONDUCTING CIRCUITS TEAM — We report measurements of energy relaxation (T1) and dephasing (T2) of various transitions of a flux-tunable 3D fluxonium circuit. Relaxation measurements span an order of magnitude frequency variation of qubit transitions (1 - 10 GHz) and the observed lifetimes vary from microseconds to milliseconds. We utilize flux knob to enhance/reduce the sensitivity of the qubit to Purcell effect, dielectric loss, and quasiparticle tunneling. T2 measurement is performed both at the spots maximally-sensitive to flux noise - where it never drops below a microsecond - and at the flux sweet spots.

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Date submitted: 12 Nov 2016

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