

Abstract Submitted
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Trapping a single vortex in a superconducting microwave resonator¹ IBRAHIM NSANZINEZA, B.L.T. PLOURDE, Syracuse University — Trapped vortices in a superconducting microwave resonant circuit can have a significant influence on the loss and resonance frequency. By varying the linewidths of our resonators in different configurations and weakly coupling them to the measurement circuitry, we are able to resolve the shift of the resonance caused by the addition of individual vortices that become trapped following a field-cooling process. In addition, by probing harmonics with different driving forces on the vortices, we are able to study interactions between the trapped vortices and non-equilibrium quasiparticles in the superconducting film. We will discuss prospects for upcoming microwave experiments based on the trapping of a single vortex.

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