5. Annual MT Meeting



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Phonon traps to reduce the quasiparticle density in superconducting circuits

Tuesday 5 March 2019 17:25 (3 minutes)

Out of equilibrium quasiparticles (QPs) are a main source of dissipation and noise in superconducting circuits. The generation-recombination

processes of QPs link their dynamics to the phonon dynamics of the circuit and substrate ensemble. We demonstrate that surrounding

granular aluminum resonators with lower gapped aluminum islands increases the internal quality factors of the resonators in the single

photon regime, suppresses the noise, and reduces the rate of observed QP generation events, which we all attribute to phonon trapping.

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