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**Coupled Harmonics in Nonlinear Coplanar Waveguide Resonators** JOSE AUMENTADO, MINHYEA LEE<sup>1</sup>, LAFE SPIETZ, NIST — The coplanar waveguide resonator has become a ubiquitous design element in superconducting quantum information experiments. By necessity, many of these resonators are loaded with nonlinear elements and, as such, incorporate a mechanism for coupling power between harmonic modes of the system. In this talk, we will present a specific example in which a dc SQUID terminates a quarter wave resonator and how the mode coupling via this nonlinear element can both enhance and degrade the performance of this device as a parametric amplifier and frequency converter.

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