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Lumped-element microwave resonant circuit with a dc SQUID

M.P. DEFEO, C. SONG, T.W. HEITMANN, K. YU, B.L.T. PLOURDE, Syracuse University, R. MCDERMOTT, University of Wisconsin — We have fabricated lumped-element microwave resonant circuits consisting of a dc SQUID shunted with a capacitor formed from superconducting layers. Adjusting the SQUID bias conditions changes its Josephson inductance, thus varying the resonant frequency. We discuss the possibility of time-domain monitoring of the oscillations in these circuits and their potential use in a new readout scheme for superconducting qubits.

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