

Abstract Submitted
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A fluxonium-based artificial molecule with a tunable magnetic moment¹ A. KOU, W.C. SMITH, U. VOOL, R.T. BRIERLEY, H. MEIER, L. FRUNZIO, S.M. GIRVIN, L.I. GLAZMAN, M.H. DEVORET, Department of Applied Physics, Yale University — We have designed and measured an engineered artificial molecule, composed of two strongly coupled fluxonium atoms, which possesses a tunable magnetic moment. An externally applied magnetic flux tunes the molecule between two regimes: one in which the ground-excited state manifold has a magnetic dipole moment and one in which the ground-excited state manifold has only a magnetic quadrupole moment. By varying the applied external flux, we find the coherence of the molecule to be limited by local flux noise.

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