

Abstract Submitted
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Measurement of a fluxonium qubit embedded in a waveguide¹ A. KOU, W.C. SMITH, I.M. POP, R.J. SCHOELKOPF, M.H. DEVORET, Department of Applied Physics, Yale University — The fluxonium qubit in a 3D cavity has been shown to have energy relaxation times of order 1 ms. The qubit readout contrast, however, was only approximately 10 degrees. High qubit readout contrast and fast operations on a qubit state are necessary ingredients for any implementation of a quantum computer. We have designed and measured a fluxonium qubit embedded in a waveguide in order to achieve these goals. We present measurements of the dispersive shift on a Josephson junction resonator inductively coupled to the fluxonium qubit as well as the relaxation times of the fluxonium qubit in this new architecture.

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