Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Efficient photon detection with a Josephson Parametric Amplifier W.F. KINDEL, JILA, University of Colorado, M.D. SCHROER, JILA, M.R. VISSERS, J. GAO, D.P. PAPPAS, NIST, K.W. LEHNERT, JILA, University of Colorado — Josephson Parametric Amplifiers (JPAs) are an important resource in quantum limited measurement, feedback and nonclassical state generation. To study the JPA transformation, we use a superconducting qubit-cavity system to launch single photons or, n=1 Fock states, into a JPA, which measures the state. From repeated measurements, we can infer the state's loss of purity as a results of the JPA transformation. We will present our estimates of the JPA's efficiency as a photon detector in comparison to Gaussian characterization methods.

William Kindel
JILA, University of Colorado

Date submitted: 14 Nov 2014 Electronic form version 1.4