

Abstract Submitted
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Four-wave mixing in a diamond configuration: correlated photons.¹ R.T. WILLIS, F.E. BECERRA², S.L. ROLSTON, L.A. OROZCO, Joint Quantum Institute, Dept. Physics, University of Maryland and NIST, College Park MD 20742, USA — We are investigating the use of spontaneous four-wave mixing in atomic vapors for the production of photon pairs of different wavelengths with non-classical correlations. We use a diamond atomic configuration with one ground, two intermediate, and one upper state. We observe stimulated four-wave mixing in both a vapor cell and a magneto-optical trap of Rb, producing light at 1367 nm with input beams of 780, 795, and 1324 nm. We will present our progress toward the measurement of the cross-correlation function between phase-matched, spontaneously emitted 780 and 1367 nm photons, with input beams of 795 and 1324 nm.

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