

Abstract Submitted
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Low-frequency vacuum squeezing in Rb vapor EUGENIY MIKHAILOV, IRINA NOVIKOVA, College of William & Mary — Reduction of noise in the optical field below the quantum noise limit is called squeezing. We study generation of squeezed vacuum at 795nm central wavelength in Rb vapor via resonant polarization self-rotation of the pump field, and report noise sidebands suppression of ~ 1 dB below shot noise level spanning from acoustic (tens of kHz) to MHz frequencies. The spectral range of observed squeezing matches well typical bandwidths of electromagnetically induced transparency (EIT) resonances. Thus, this simple technique for generation of optical fields with non-classical statistics at atomic transitions wavelengths is attractive for EIT-based quantum information protocols applications.

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