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Generating Low-Frequency Squeezed Light from Four-Wave Mixing[1] MENG-CHANG WU, TRAVIS HORROM, BRIAN ANDERSON, Joint Quantum Institute, National Institute of Standards and Technology and the University of Maryland, College Park, MD 20742, USA, PAUL LETT, Quantum Measurement Division, National Institute of Standards and Technology and JQI, NIST and UMD, Gaithersburg, MD 20899, USA — We generate squeezed light near the D1 atomic resonance using four-wave mixing (4WM) in a warm Rb vapor. Given the desire in many applications to have squeezed light for measurement improvements at low (typically acoustic) frequencies, we are investigating what operating parameters affect the low-frequency squeezing in this system. We use an amplified, feedback-narrowed ($\sim$ 10 kHz linewidth) diode laser to pump and seed the process and we examine the effects of laser linewidth as well as the detuning, beam alignment and intensity parameters used in the generation process on the low frequency limit of the squeezing. Squeezing limits below 500 Hz are obtained.

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