

Abstract Submitted
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Controllable Dispersion in an Optical Laser Gyroscope¹ OWEN WOLFE, The College of William Mary, Williamsburg, VA 23185, USA, SHUANGLI DU, The College of William Mary, SIMON ROCHESTER, DMITRY BUDKER, Rochester Scientific, LLC, El Cerrito, CA, 94530, USA, IRINA NOVIKOVA, EUGENIY MIKHAILOV, The College of William Mary, Williamsburg, VA 23185, USA — Optical gyroscopes use Sagnac interferometry to make precise measurements of angular velocity. Increased gyroscope sensitivity will allow for more accurate control of aerospace systems and allow for more precise measurements of the Earth's rotation. Severalfold improvements to optical gyroscope sensitivity were predicted for fast light regimes ($n_g < 1$). We evaluated the feasibility of these improvements in the N-bar dual pump scheme in ^{87}Rb vapor. We were able to modify the stimulated gyroscope response via tuning the experimental parameters. Gyroscope sensitivity was shown to be dependent on several parameters including pump power, pump detuning, and vapor density.

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