Abstract Submitted
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10 dB of Spin Squeezing via Measurement – a Useful Entanglement Resource[1] KEVIN COX, JUSTIN BOHNET, MATTHEW NORCIA, JOSHUA WEINER, ZILONG CHEN, JAMES THOMPSON, JILA, University of Colorado at Boulder — We report results from an experiment to generate and directly observe 10.2(6) dB of spin squeezing using a quantum non-demolition measurement (QND), the most directly observed spin squeezing in an atomic ensemble to date. The squeezing is generated by measuring state populations through an optical cavity on a closed optical transition in an ensemble of $5 * 10^5$ ^{87}Rb atoms. Such a scheme can be applied to optical lattice clocks using Sr and Yb.

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