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New Frontiers in Spin Squeezing KEVIN COX, JOSHUA WEINER, GRAHAM GREVE, JAMES THOMPSON, JILA, NIST, and Dept. of Physics, University of Colorado at Boulder — Entangled states of atoms are becoming increasingly practical as a resource for enhancing precision measurements. In a recent experiment, we generated and directly observed 10.2(6) dB of spin squeezing using a quantum non-demolition (QND) measurement, one of the largest amounts of directly observed spin squeezing in an atomic ensemble to date. In this poster, we present progress and recent results from a next-generation spin squeezing experiment aimed at generating even larger amounts of entanglement in an ensemble of Rb atoms.

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