Abstract Submitted
for the DAMOP13 Meeting of
The American Physical Society

Suppression of Spin-Exchange Relaxation Using Pulsed Parametric Resonance ANNA KORVER, University of Wisconsin Madison, ROBERT WYLLIE, NIST Gaithersburg, BRIAN LANCOR, THAD WALKER, University of Wisconsin Madison — A new method of optical pumping is presented in which ^{87}Rb atoms are fully polarized perpendicular to a large DC magnetic field by applying a transverse AC coupled pulsed field. When the repetition rate of the pulsed field matches the Larmor frequency of the DC field, decoherence due to spin exchange collisions is suppressed beyond the light narrowed regime. We will present results demonstrating this further suppression and show the improved magnetometer response over a traditional light-narrowed parametric resonance magnetometer. This work is funded by the NSF.

Anna Korver
University of Wisconsin Madison

Date submitted: 23 Jan 2013 Electronic form version 1.4