

Abstract Submitted
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Progress Towards the Detection of Faraday Rotation on Polarized Helium-3¹ WOLFGANG KORSCH, JOSHUA ABNEY, MARK BROERING, GRETCHEN PHELPS, University of Kentucky — Off-resonance Faraday rotation can conceivably offer a new way of monitoring the nuclear spin polarization of dense polarized helium-3 targets. A very sensitive triple-modulation technique has been devised to detect rotation angles with a sensitivity of a few times 10^{-8} rad. The first goal is to isolate the magnetic contribution to Faraday rotation on a spin-polarized target. The technique has been successfully applied to several test samples. Progress towards the detection of a spin-induced rotation on an optically pumped spin-exchange polarized helium-3 target will be reported.

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