

Abstract Submitted
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Overview of the Parity Violating Neutron Spin Rotation Measurement in Liquid ^4He ¹ T.D. FINDLEY, C.D. BASS, J.M. DAWKINS, J.C. HORTON, C.R. HUFFER, D. LUO, A.M. MICHERDZINSKA, M.G. SARSOOR, W.M. SNOW, Indiana University / IUCF, B.E. CRAWFORD, Gettysburg College, K. GAN, A.K. OPPER, The George Washington Univ, B.R. HECKEL, H.E. SWANSON, Univ of Washington, P.R. HUFFMAN, D.M. MARKOFF, North Carolina Central Univ, H.P. MUMM, J.S. NICO, NIST, E.I. SHARAPOV, Joint Institute for Nuclear Research, Dubna, V. ZHUMABEKOVA, Al-Farabi Khazakh National Univ — We present an overview of the physics and experimental design of an experiment to measure the parity violating (PV) neutron spin rotation of polarized neutrons propagating through liquid- ^4He . This spin rotation is a PV observable that can be used to study the hadronic weak interaction, which is poorly understood. A previous measurement gave a result of $(8.0 \pm 14(\text{stat}) \pm 2.2(\text{syst})) \times 10^{-7}$ rad/m[1]. The new measurement has sensitivity goal of 3×10^{-7} rad/m. [1] PhD thesis: Measurement of the Parity Nonconserving Spin-Rotation of Transmitted Cold Neutrons Through a Liquid Helium Target; D.M Markoff

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