Abstract Submitted
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A Neutron Polarimeter for the Parity Violating Neutron Spin Rotation Measurement in Liquid ^{4}He[1] D. LUO, Indiana University/IUCF, C.D. BASS, IUCF/NIST, T.D. BASS, Indiana University/IUCF, B.E. CRAWFORD, Gettysburg College, J.M. DAWKINS, Indiana University/IUCF, K. GAN, George Washington University, B.R. HECKEL, University of Washington, J.C. HORTON, Indiana University/IUCF, C.R. HUFFER, North Carolina State University/TUNL, D.M. MARKOFF, North Carolina Central University, A.M. MICHERDZINSKA, George Washington University, H.P. MUMM, J.S. NICO, NIST, A.K. OPPER, George Washington University, M.G. SARSOUR, Georgia State University, E. SHARAPOV, Joint Institute for Nuclear Research, W.M. SNOW, Indiana University/IUCF, H.E. SWANSON, University of Washington, S.C. WALBRIDGE, Indiana University/IUCF, V. ZHUMABEKOVA, Al-Farabi Kazakh National University
— To better understand the N-N weak interaction, we performed an experiment on the NG-6 beamline at NCNR using polarized cold neutrons passing through a liquid ^{4}He target to measure the parity violating spin rotation. This is the most sensitive neutron spin rotation experiment performed to date. The polarimeter is designed to isolate the parity-odd component of the rotation, cancel the Larmour precession background from residual magnetic fields to isolate the expected 10^{-6} rad/m parity-odd signal, and reduce nonstatistical noise from neutron source intensity fluctuations. We will discuss the design and operation of the neutron polarimeter.

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