

Abstract Submitted
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Calibration of Apparatus for Parity-Violating Neutron Spin Rotation in ^4He Using Heavy Nuclei and Small Angle Scattering Standards J.M. DAWKINS, Indiana Univ./IUCF, V. ZHUMABEKOVA, Al-Farabi Khazakh National Univ., K. GAN, A.K. OPPER, The George Washington Univ., B.E. CRAWFORD, Gettysburg College, C.D. BASS, T.D. FINDLEY, J.C. HORTON, C.R. HUFFER, D. LUO, A.M. MICHERDZINSKA, M. SARSOUR, W.M. SNOW, Indiana Univ./IUCF, E.I. SHARAPOV, Joint Institute for Nuclear Research, Dubna, H.P. MUMM, J.S. NICO, NIST, D.M. MARKOFF, North Carolina Central Univ., P.R. HUFFMAN, North Carolina State Univ. /TUNL, B.R. HECKEL, H.E. SWANSON, Univ. of Washington — A measurement of parity-violating (PV) neutron spin rotation in liquid ^4He , is being prepared at the NIST Center for Neutron Research (NCNR). To test the apparatus and amplify certain possible systematic effects we plan to conduct spin rotation measurements in the nuclei ^{139}La , ^{81}Br , and ^{35}Cl . Large PV spin rotation effects have been seen in the past in ^{139}La and ^{81}Br , and ^{35}Cl possesses a large P-odd gamma asymmetry. We also plan to use D_2O , whose small angle neutron scattering is well-known, to verify our estimates of systematic effects from small angle scattering and longitudinal magnetic fields. I will talk about our choices of targets and the design of target system. Work supported in part by NSF PHY-0457219.

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