

Abstract Submitted
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Measurements of Polarized Neutron Beam Properties at NG-6 NIST and Performance of Polarized Neutron Optical Devices for a Precision Measurement of Parity-Violating Neutron Spin Rotation in ^4He A.M. MICHERDZINSKA, 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, J.M. DAWKINS, T.D. FINDLEY, J.C. HORTON, C.R. HUFFER, D. LUO, M.G. 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 ^4He to learn about NN weak interactions is now in preparation at the NIST Center for Neutron Research (NCNR). Because the expected magnitude of the PV signal is $\sim 10^{-7}$ rad/m, and our sensitivity goal is 3×10^{-7} rad/m, knowledge of certain beam properties is essential to interpret the data properly and set limits on possible sources of systematic errors. I will present measurements of the beam intensity profile, wavelength distribution, flux, and the product of the polarizing power of the polarizer and the analyzing power of the polarization analyzer as a function of wavelength, position, and angle. Work supported in part by NSF PHY-0457219.

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