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A Measurement of the Parity-Violating Neutron Spin Rotation in 4He[1] W. SNOW, Indiana University/IUCF, C. BASS, T. BASS, National Institute of Standards and Technology, B. CRAWFORD, Gettysburg College, M. DAWKINS, Indiana University/IUCF, K. GAN, George Washington University, B. HECKEL, University of Washington, J. HORTON, Indiana University, C. HUFFER, North Carolina State University/TUNL, D. LUO, Indiana University, D. MARKOFF, North Carolina Central University, A. MICHERDZINSKA, George Washington University, P. MUMM, J. NICO, National Institute of Standards and Technology, M. SARSOUR, Georgia State University, E. SHARAPOV, Joint Institute for Nuclear Research, E. SWANSON, University of Washington, S. WALBRIDGE, Indiana University, V. ZHUMABEKOVA, Al-Farabi Kazakh National University, P. HUFFMAN, North Carolina State University — A weak interaction between nucleons is induced by the quark-quark weak interaction in the Standard Model. At present the NN weak interaction is poorly constrained by experiment. We conducted an experiment to search for parity violation in the rotation of the plane of polarization of slow neutrons in liquid 4He at the Center for Neutron Research at the National Institute of Standards and Technology. In this talk we will report a preliminary result for a measurement of parity-violating neutron spin rotation in 4He. We will also discuss the prospects for follow-on experiments with reduced statistical and systematic errors.

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