Abstract Submitted for the DNP07 Meeting of The American Physical Society

A Study of the Effect of Neutron Beam on ³He Spin Filters MONISHA SHARMA, University of Michigan Ann Arbor, LIBERTAD BARRON-PALOS, Arizona State University, TIMOTHY E. CHUPP, University of Michigan Ann Arbor, CHRISTOPHER CRAWFORD, University of Tennessee, AREG DANAGOULIAN, Los Alamos National Laboratory, THOMAS R. GENTILE, National Institute of Standards and Technology, GORDON JONES, Hamilton College, ANDREAS KLEIN, Los Alamos National Laboratory, BERNHARD LAUSS, Institut Laue-Langevin, SEPPO I. PENTTILA, Oak Ridge National Laboratory, TODD B. SMITH, University of Dayton, ERIC TARDIFF, University of Michigan Ann Arbor, W. SCOTT WILBURN, Los Alamos National Laboratory — A polarized ³He neutron spin filter has been used for the NPDGamma experiment at the FP12 beamline at LANSCE. During the experiment we observed a new, but currently unexplained effect of the neutron beam on the ³He polarization, leading to reductions of the ³He polarization of several percent. This effect is consistent with a rapid reduction of the average rubidium polarization, but could also be due to a reduction of the 3 He relaxation rate. It is not known how the effect scales with neutron flux or flux density. Systematic studies of Rb and ³He polarization in the neutron beam are currently underway at LANSCE and the progress towards the understanding of this effect will be reported.

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Date submitted: 02 Jul 2007

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