

Abstract Submitted
for the APR09 Meeting of
The American Physical Society

Transport Simulation towards Understanding the Field-Dependent Ultracold Neutron Production in Solid Oxygen YU FENG, CHEN-YU LIU, CHRISTOPHER LAVELLE, Indiana University, YUNCHANG SHIN, University of Kentucky, DANIEL SALVAT, PATRICK MCCHESENEY, GREG MANUS, Indiana University, GUILHEM RIBEILL, ALBERT YOUNG, NC State University, CHRIS MORRIS, MARK MAKELA, ANDY SAUNDERS, Los Alamos National Laboratory, ADAM HOLLEY, NC State University — We will present a Monte-Carlo simulation on ultracold neutron (UCN) transport in the guide system used in the UCN production experiment in the summer of 2008. The simulation uses a UCN package [1] previously developed at Paul Scherrer Institute using the GEANT4 framework. The resulting transport efficiency is benchmarked by measurements on UCN transport through the same guide system. Furthermore, we simulate UCN transport through a non-uniform, solenoid magnetic field, results of which are used to extract the information of field-dependent UCN production in Solid Oxygen in low temperature alpha- and beta- phases. [1] F. Atchison et al., NIMA 552 (2005) 513

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Date submitted: 09 Jan 2009

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