

Abstract Submitted  
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**Measurement of Cold Neutron Depolarization in Liquid and Solid Deuterium** ALEXANDER KOMIVES, ANDREW BEVER, SARAH CARLSON, DePauw University, MIKE SNOW, YUN SHIN, CHEN-YU LIU, Indiana University, JOHN DAWSON, University of New Hampshire, KLAUS KIRCH, MALGORZATA KASPRZAK, MARCIN KUZNIAK, BEN VAN DEN BRANDT, PATRICK HAUTLE, TON KONTER, AXEL PICHLMAIER, Paul Scherrer Institut, KAZIMIERZ BODEK, STANISLAW KISTRYN, MARCIN KUZNIAK, JACEK ZEJMA, Institute of Physics; Jagiellonian University — A proposed experiment to measure the spin rotation, originating from the parity violating weak interaction, of polarized cold neutrons as they traverse through a deuterium target will yield further information on the weak meson coupling constants. However, neutron depolarization from a relatively large scattering cross section of a few barns could severely dilute the already small spin rotation signal. Likewise another proposed experiment, also designed to shed light on the weak meson couplings by measuring the parity violating gamma asymmetry from neutron capture on deuterium, could be compromised by the same neutron depolarizing scattering process. To explore the feasibility of these proposed measurements, an experiment was recently performed at the FUNSPIN beamline at the Paul Scherrer Institut to measure the depolarization of neutrons transmitted through liquid and solid ortho-deuterium as a function of neutron energy. Preliminary results will be presented.

Alexander Komives  
DePauw University

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