

Abstract Submitted  
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**Neutron Polarization Measurements with a  $^3\text{He}$  Spin Filter for the NPDGamma Experiment** MATTHEW MUSGRAVE, University of Tennessee, NPDGAMMA COLLABORATION — The Fundamental Neutron Physics Beamline (FNPB) at the Spallation Neutron Source (SNS) provides a pulsed beam of polarized cold neutrons for the NPDGamma experiment which intends to measure the parity violating asymmetry in the emitted gamma rays from the capture of polarized neutrons on protons in a para-hydrogen target. The neutrons are polarized by a multi-channel super mirror polarizer, and the polarization of each neutron pulse can be flipped with an RF spin rotator. The accuracy of the NPDGamma experiment and various commissioning experiments is dependent on the polarization of the neutron beam and the efficiency of the RF spin rotator. These parameters are measured with a polarized  $^3\text{He}$  spin filter at multiple points in the beam cross section and with multiple  $^3\text{He}$  polarizations. The measured neutron polarization is compared to a McStas model to validate our results and our beam averaging technique. The analysis methods, background effects, and results will be discussed.

Matthew Musgrave  
University of Tennessee

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