

Abstract Submitted
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Characterization of a scintillating lithium glass ultra-cold neutron detector¹ LORI REBENITSCH, University of Winnipeg, CANADA-JAPAN UCN COLLABORATION COLLABORATION — A new ^6Li -glass ultra cold neutron detector was developed for the neutron Electric Dipole Moment (nEDM) experiment being prepared for the TRIUMF Ultra-Cold Neutron (UCN) source. The detector was characterized using the UCN source at the Paul Scherrer Institute (PSI). This talk will review detection of UCN with ^6Li detectors, the detector and data acquisition design, and results of measurements of UCN data taken at PSI. Results presented will include a comparison of the relative rates of the detector channels, and a comparisons with a commercial Cascade detector. A detailed simulation of scintillation pulses and the data acquisition electronics was developed to estimate the efficiency and background contamination remaining when applying a pulse shape discrimination cut. One of the highlights will be on the processing and analysis of the data, including estimates of the background rejection, the effects of pileup, and the detector stability.

¹On behalf of the Canada-Japan UCN Collaboration

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