

Abstract Submitted  
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**Beamline Characterization for the Neutron Electric Dipole Moment Search at Los Alamos National Laboratory**<sup>1</sup> DOUGLAS WONG, Indiana Univ - Bloomington, NEDM AT LANL COLLABORATION — A non-zero neutron electric dipole moment (nEDM) would be evidence of parity (P) and time reversal (T) symmetry breaking. The latter, under the CPT theorem, implies a violation of CP (charge conjugate-parity), which is one of the key Sakharov requirements for baryogenesis to produce the observed baryon asymmetry of the universe. The nEDM search at Los Alamos National Laboratory (LANL) plans to take advantage of a recent neutron source upgrade to realize an incremental improvement on nEDM sensitivity of  $3 \times 10^{-27} e \cdot cm$ . The experimental apparatus is currently being constructed at the Los Alamos Neutron Science Center (LANSCE) with an anticipated data-collection start in 2022. I will describe the result of measurements characterizing the ultra cold neutron (UCN) beamline where the experiment is located. This includes measurements of UCN density in a prototype experimental chamber, UCN transmission through a polarizing magnet, and UCN spin relaxation time. I will also discuss Monte Carlo simulations and additional analysis to understand measurement results.

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