

Abstract Submitted  
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**Ultracold Neutron Density for the Neutron Electric Dipole Moment Search at Los Alamos National Laboratory<sup>1</sup>** DOUGLAS WONG, AUSTIN REID, Indiana Univ - Bloomington, TAUFIQUE HASSAN, Los Alamos National Laboratory, NEDM AT LANL COLLABORATION — The neutron electric dipole moment (nEDM) search at Los Alamos National Laboratory (LANL) will use the Ramsey method of oscillatory fields on stored ultracold neutrons (UCNs) to perform a measurement with a sensitivity of  $\sigma(d_n) = 3 \times 10^{-27} e \cdot cm$ . Achieving this statistical sensitivity requires a large stored UCN density, long storage lifetime, long spin coherence time, and careful neutron transport from the UCN source to the experiment. We discuss progress on UCN transport and storage at the envisioned location of the experiment. Thus far, we have succeeded in storing sufficiently large numbers of polarized UCNs for a sufficiently long period of time in a realistic, prototype storage cell. Additionally, we describe the use of Monte Carlo simulations to understand neutron transport measurements, and to predict expected neutron spin contrast and lifetime in the final storage geometry.

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