

Abstract Submitted
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Magnetic Coil System for the LANL nEDM Experiment¹ JARED BREWINGTON, Univ of Kentucky, LANL-NEDM COLLABORATION — Permanent electric dipole moments represent a prospective avenue for the discovery of beyond standard model physics. The advent of experimental techniques using stored ultracold neutrons (UCNs) has placed the neutron electric dipole moment (nEDM) at the forefront of permanent electric dipole moment searches. The current experimental upper limit for the nEDM is $d_n < 1.8 \times 10^{-26}$ e-cm (90% CL). The neutron EDM search to be conducted at Los Alamos National Laboratory (LANL) aims to advance the experimental measurement of the nEDM to a sensitivity of 3×10^{-27} . Reaching the proposed sensitivity requires precise magnetic field control, specifically a highly uniform B_0 holding field, as well as efficient transport of UCN polarization from the polarized neutron source into the storage volume. A series of magnetic coils will be employed to meet the specifications for field uniformity and polarization transport. This talk will discuss the design of the magnetic coil system for the LANL-nEDM experiment.

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