Abstract Submitted
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Magnetic Field Design for the LANL nEDM Experiment[1] RYAN DADISMAN, Univ of Kentucky — A recent UCN source upgrade at LANSCE makes possible an order of magnitude advancement in the measurement of the neutron electric dipole moment by use of the familiar Ramsey method of separated oscillatory fields. A highly uniform B0 magnetic field is required to achieve sufficiently long spin-relaxation times and to suppress the false EDM caused by the geometric phase effect. We identified a multi-gap solenoid as an ideal candidate to simultaneously achieve the uniformity requirements, via optimization of the gap lengths between and current within different sections, and provide plentiful access to the fiducial region. Results from initial tests of the coil when installed in the magnetic shield house enclosing the experiment will be presented.

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