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Characterization of a 1/2 scale prototype magnet for the SNS neutron electric dipole moment experiment¹ ADRIAN PEREZ GALVAN, BRADLEY FILIPPONE, California Institute of Technology, NEUTRON EDM COLLABORATION — A new multi-institutional effort to measure the neutron electric dipole moment (nEDM) using ultra-cold neutrons and polarized ³He in a bath of superfluid ⁴He is currently underway at the Spallation Neutron Source at Oak Ridge National Laboratory. The search for the nEDM asks for stringent requirements on the stability and uniformity of the magnetic environment where the experiment takes place. A high uniformity holding field (provided by a modified $\cos(\theta)$ coil) plus several layers of magnetic shielding provide this pristine environment. We present measurements of the uniformity and stability of a half-scale coil inside magnetic shields under different experimental conditions and experimental parameters.

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