

Abstract Submitted  
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**Prototyping the magnetic environment for the measurement of the neutron EDM at SNS** RUEDIGER PICKER, California Institute of Technology, SMS NEDM COLLABORATION — The SNS nEDM collaboration is developing a cryogenic EDM experiment with an ultimate precision goal of  $< 4 \cdot 10^{-28}$  e-cm; a factor of 100 better than the present lower limit. A finite measurement of the electric dipole moment (EDM) of the neutron would be a significant non-standard model discovery and a step towards explaining the matter-antimatter symmetry of the universe. A key prerequisite is a magnetic environment in the measurement cell that is very homogeneous and stable over the measurement time. At Caltech, we have built a half-scale prototype of the superconducting shield and magnets for characterization and optimization. The talk will introduce the setup and present recent results at cryogenic temperatures.

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