

Abstract Submitted
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Magnetic Field Monitoring in the SNS and LANL Neutron EDM Experiments¹ ALINA ALEKSANDROVA, Department of Physics and Astronomy, University of Kentucky , SNS NEDM COLLABORATION, LANL NEDM COLLABORATION — The SNS neutron EDM experiment requires the ability to precisely control and monitor the magnetic field inside of the fiducial volume. However, it is not always practical (or even possible) to measure the field within the region of interest directly. To remedy this issue, we have designed a field monitoring system that will allow us to reconstruct the field inside of the fiducial volume using noninvasive measurements of the field components at discrete locations external to this volume. A prototype probe array (consisting of 12 single-axis fluxgate magnetometer sensors) was used to monitor the magnetic field within the fiducial volume of an in-house magnetic testing apparatus. In this talk, the design and results of this test will be presented, and the possible implementation of this field monitoring method may have in the room temperature LANL neutron EDM experiment will be discussed.

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