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Measurement of Neutron Polarization and Transmission for the SNS nEDM Experiment.

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The existence and size of a neutron electric dipole moment (nEDM) remains an important question in particle and cosmological physics. The SNS nEDM experiment proposes a new limit for nEDM search by using ultra-cold neutrons (UCN) in a bath of superfluid helium. The experiment uses polarized 8.9\AA neutrons to create polarized UCN in situ in superfluid helium via superthermal downscattering. This process requires the 8.9\AA neutrons to retain their polarization as they pass through the magnetic shielding and nEDM cryostat windows. This talk will describe a setup to measure the neutron polarization loss from the magnetic shielding and cryostat windows.

Summary

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