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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 ultracold neutrons (UCN) in a bath of superfluid helium. The experiment uses polarized  $8.9\text{\AA}$  neutrons to create polarized UCN in situ in superfluid helium via superthermal downscattering. This process requires the  $8.9\text{\AA}$  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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**Session Classification:** Fundamental Symmetry Tests

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