

Abstract Submitted
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NOPTREX: A Neutron Optics Time-Reversal Violation Experiment in Forward-Scattering Neutron-Nucleus Reactions¹ DANIELLE SCHAPER, Los Alamos National Laboratory, NOPTREX COLLABORATION — One of the motivations to search for new physics Beyond the Standard Model is to understand the baryon asymmetry present in the Universe, namely the glaring discrepancy between the theoretical prediction of the baryon asymmetry based on the Standard Model and the value obtained through observations of the cosmic microwave background. The Neutron OPTics Time Reversal EXperiment (NOPTREX) collaboration is performing R&D toward an experiment to search for parity-odd (P-odd) and time-odd (T-odd) neutron-nucleus interactions in polarized epithermal (~ 1 eV) neutron forward scattering interactions in polarized target nuclei containing $\ell = 1$ neutron-nucleus resonances where parity violation is already known to be amplified by several orders of magnitude. NOPTREX can provide a complementary search to other probes of CP violation such as electric dipole moments. This talk will cover the theoretical background [1], current experimental progress, and long-term goals of the NOPTREX collaboration.

[1] J. D. Bowman and V. Gudkov, Phys. Rev. C **90**, 065503 (2014).

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