

Abstract Submitted
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NOPTREX: A Search for Time Reversal Violation; Detector Development and Nuclear Spectroscopy on the 0.734 eV p-wave resonance in ^{139}La ¹ DANIELLE SCHAPER, Univ of Kentucky, NOPTREX COLLABORATION — Searches for new sources of time reversal (T) violation are one of the highest intellectual priorities in nuclear, particle, and astrophysics. The NOPTREX collaboration aims to conduct a sensitive null-test search for T violation in polarized neutron transmission through polarized nuclear targets which possess low energy p-wave resonances. One candidate nuclei of interest, ^{139}La , has a 0.734 eV resonance which exhibits a very large parity-violating asymmetry. We will describe spectroscopy measurements which can provide useful, relevant information on this resonance such as preliminary "double lanthanum" parity violation measurements as well as discuss the design and construction of the neutron detector and rotation stage that will be used both for these tests and in the ultimate NOPTREX experiment. Reference: J.D. Bowman and V. Gudkov, Phys Rev C 90, 065503, 2014

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