

Abstract for the 2017 Annual Meeting Kentucky Academy of Science

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Data analysis of JPARC run to test Current-Mode Detector for Use in NOP-TREX Time Reversal Experiment¹. DANIELA OLIVERA, Berea College - Charge, Parity and Time reversal (CPT) conservation is one of the most fundamental assumptions in the Standard Model. One of the current problems in physics is the observed matter/antimatter asymmetry seen in the universe. In 1967, Sakharov proposed three conditions necessary for this asymmetry to occur, one of which is a need for processes that violate time reversal (T). The primary goal of the Neutron Optics Time Reversal Experiment (NOPTREX) Collaboration is to search for T-violation in polarized neutron transmission through a polarized nuclear target. This presentation will include an explanation of the NOPTREX experiment as well as preliminary measurements taken on indium and tantalum resonances at the NOBORU test beam at the Japan Proton Accelerator Research Complex (J-PARC) in June 2017 to test the functionality of the detector that will be used in the final experiment.

¹This work was supported by the Department of Energy under contract DE-SC0008107 and Berea College Office of Internships.