

Abstract Submitted
for the DNP20 Meeting of
The American Physical Society

Analysis of P- and T-violation effect in NOPTREX Experimental Scheme.¹ HEJER DHAHRI, University of Kentucky, IVAN NOVIKOV , Western Kentucky University , WILLIAM SNOW , Indiana University Bloomington, NOPTREX COLLABORATION — The Neutron Optics Parity and Time Reversal EXperiment (NOPTREX) will search for possible parity (P) and time (T) reversal invariance violating effects in propagation of polarized neutrons with polarized target. It can be realized by comparing the polarization of an initially unpolarized neutron beam (P) to the asymmetry of initially polarized neutron beam (A) in propagation through a polarized target. The difference between measured polarization and asymmetry would indicate the presence of PT-violating interaction [1]. The measurement can be realized by reversing the neutron polarizer and polarized target on a rotating turntable so the neutron polarizer acts as a neutron analyzer. This method can be free from final state effects [2]. In this talk, using techniques introduced in [3] and [4], we discuss energy dependence of PT-violating effect on a neutron energy, and the possible systematic uncertainties that can arise from various types of deviations from the idealized conditions. [1] P.K. Kabir, Phys. Rev. D, 25, 1985, p. 2013 [2] J. D. Bowman and V. P. Gudkov, Phys. Rev. C 90, 065503 (2014). [3] R. Golub, S.K. Lamoreaux, Phys Rev D, 50, 9, 1994. [4] V. Bunakov V. Gudkov, Z. Phys. A, v.308, 1982, p. 363; V. Bunakov Physics of Particles and Nuclei, v. 26, 2, 1995, pp.115-1

¹This material is based upon work supported by the U.S. NSF under award OIA-1355438 and the U.S. Department of Energy, Office of Science, Office of Nuclear Physics, under Award Number DE-SC0014622.

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Date submitted: 25 Jun 2020

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