Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Analysis of Gamma Ray Detector Data for the NDTGamma Experiment[1] GABIJA ZIEMYTE, CHRISTOPHER CRAWFORD, University of Kentucky, NDTGAMMA COLLABORATION — The goal of the NDTGamma experiment is to measure effects of the weak nuclear force in the reaction of neutron capture on heavy hydrogen, producing a gamma ray with 6.2 MeV of energy. Initial tests of this experiment were carried out in collaboration with NOPTREX at the Los Alamos National Laboratory at FP 12 at LANSCE using a small 4x4 CsI(TI) detector array and a D2O target. The detector pulses were analyzed using digital signal processing algorithms, and a goal of the initial tests was to demonstrate fast pulse counting techniques for 6.2 MeV gamma rays. I will present these algorithms and the resulting gamma ray spectrum from this test run, which will demonstrate the suitability of these components for the full 100-detector array in the future NDTGamma experiment.

[1]*This material is based upon work supported by the U.S. Department of Energy, Office of Science, Office of Nuclear Physics under Award Number DE-SC0014622

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Date submitted: 07 Jan 2021 Electronic form version 1.4