

Abstract Submitted
for the APR07 Meeting of
The American Physical Society

Parity violation in $\bar{n}p \rightarrow d\gamma$ at LANSCE ROB MAHURIN, University of Tennessee, Knoxville, NPDGAMMA COLLABORATION — The longitudinal asymmetry A_γ in photons emitted during radiative neutron-proton capture depends cleanly on the neutral current contribution to the weak nucleon-nucleon interaction. The NPDGamma experiment is an effort to measure this asymmetry with precision 1×10^{-8} , which is 10% of its range of predicted values. A pulsed beam of polarized slow neutrons is incident on a 16 L parahydrogen target; capture photons are observed in current mode in a cylindrical array of CsI scintillators. In 2006 the NPDGamma collaboration acquired its first production dataset at the Los Alamos Neutron Science Center. In 730 hours running with 50–55% neutron polarization, photons from some 2×10^{14} captures were observed. At present the collaboration is engaged in analysis of these data and in relocation of the apparatus to the Spallation Neutron Source, where the increased neutron flux will permit measurement of A_γ to the design precision. I will describe the 2006 run and report on the status of the current efforts.

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Date submitted: 12 Jan 2007

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