Abstract Submitted
for the DNP16 Meeting of
The American Physical Society

A measurement of the parity violating asymmetry in the neutron capture on ^{3}He at SNS. LATIFUL KABIR, University of Kentucky, THE N-3HE COLLABORATION — Weak nucleon nucleon couplings are largely unknown because of it's non-perturbative nature which makes the calculations and experiments challenging. However, parity violation (PV) can be used to isolate the weak contributions from the strong part and thus studies of PV in hadronic systems offer a unique probe of nucleon structure. The n-^{3}He experiment at the Spallation Neutron Source at the ORNL measures the parity violating asymmetry of the recoil proton momentum $\vec{k}_p$ with respect to the neutron spin $\vec{\sigma}_n$ in the reaction n+^{3}He $\rightarrow$ p+T+765 keV. This asymmetry is sensitive to the isospin-conserving and isospin-changing (ΔI = 0,1) parts of the Hadronic Weak Interaction, and is expected to be extremely small ($\sim 10^{-7}$). The experiment will determine this PV asymmetry with the statistical sensitivity of the order of 10^{-8}. Last year we completed the data taking and the data analysis is well advanced. I will describe the experiment and present the preliminary analysis of the PV asymmetry data of the experiment.

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Date submitted: 29 Jun 2016 Electronic form version 1.4