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# Final Results from the n3He Experiment: Parity Violation in n-$^3$He Capture

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Parity violation (PV), first observed in semileptonic decays, has been determined precisely for quarks and leptons as part of the Standard Model. At the hadronic level, it offers a unique probe of nucleon structure and the underlying low-energy behavior of non-perturbative QCD. The hadronic weak interaction is characterized in terms of five spin and isospin dependent S-P transition amplitudes. There is an active program to determine these low energy couplings from hadronic PV observables using cold neutron beams at the Spallation Neutron Source (ORNL) and the NCNR reactor (NIST). These experiments are carried out in few-body observables, for which the nuclear wave functions are exactly calculable, but the effects are dominated by the strong interaction by seven orders of magnitude. The n3He experiment recently completed a measurement of the PV directional proton asymmetry with respect to the neutron spin in the reaction n + $^3$He $\rightarrow$ p + $^3$H. In this talk, we will report the final result, which is sensitive to the $\Delta I = 0, 1$ transition amplitude and provides significant constraints for new theory calculations.

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