Spin Structure Functions of the Proton

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Abstract

The Spin Asymmetries of the Nucleon Experiment (SANE) is a measurement of parallel and near-perpendicular double spin asymmetries in an inclusive electron scattering. The main goal of the experiment was to measure $A_{\parallel}$ and A_{80} and extract the spin asymmetries of the proton A_1^p, A_2^p and spin structure functions g_1^p and g_2^p. Using the Thomas Jefferson National Accelerator Facility's polarized electron beam and the University of Virginia's polarized frozen ammonia ($^{14}NH_3$) target in Hall C, the experiment ran in 2009, collecting data in a Q^2 region from 2.5 to 6.5 GeV^2 and between Bjorken x of 0.3 to 0.8. Particle detection was accomplished using the Big Electron Telescope Array (BETA), a novel non-magnetic detector. This talk will address the progress of the analysis designed to extract the proton spin asymmetries and structure functions. Preliminary results will be presented.