

Abstract Submitted
for the DNP12 Meeting of
The American Physical Society

Measurement of the Spin Asymmetries of the Proton MARK JONES, Jefferson Lab, SANE COLLABORATION — The Spin Asymmetries of the Nucleon Experiment (SANE) measured the parallel, A_{\parallel} , and near-perpendicular, A_{80} , double spin asymmetries of the proton in inclusive electron scattering. Longitudinally polarized electrons were scattered from an ammonia target which provided polarized protons via dynamic nuclear polarization. The scattered electrons were detected using the Big Electron Telescope Array, BETA, which was centered at 40° and covered a large solid angle. BETA consisted of a scintillator hodoscope, gas Cherenkov, lucite hodoscope and a large array of lead glass detectors. The data was taken at the Thomas Jefferson National Accelerator Facility's Hall C at beam energies of 4.7 and 5.9 GeV and covered $2.5 GeV^2 < Q^2 < 6.5 GeV^2$. From the A_{\parallel} and A_{80} measurements, the proton's spin asymmetries, A_1 and A_2 , and the spin structure functions of the proton, g_1 and g_2 , can be extracted. The measurements are in a range of Bjorken x , $0.3 < x < 0.8$, where extraction of the twist three matrix element d_2^p (an integral of g_1 and g_2 weighted by x^2) is most sensitive.

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Date submitted: 02 Jul 2012

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