Abstract Submitted
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Beam Normal Single Spin Asymmetry in the N-to-Delta Transition[1] NURUZZAMAN NURUZZAMAN, Hampton University, QWEAK COLLABORATION — The Q-weak experiment in Hall C at the Thomas Jefferson National Accelerator Facility has made the first direct measurement of the weak charge of the proton, Q_W^p, through the precision measurement of the parity-violating (PV) asymmetry in elastic e-p scattering at low momentum transfer. The data are currently under analysis. There is a parity conserving Beam Normal Single Spin Asymmetry or transverse asymmetry (A_n) on H_2 with a $\sin(\varphi)$-like dependence due to 2-γ exchange. The size of A_n is few ppm, so a few percent residual transverse polarization in the beam, in addition to potentially small broken azimuthal symmetries in the detector, might lead to few ppb corrections to the Q-weak data. As part of a program of A_n background studies, we made the first measurement of A_n in the N-to-Delta transition using the Q-weak apparatus. A_n from electron-nucleon scattering is also a unique tool to study the $\gamma^*\Delta\Delta$ form factors [1]. Status of the analysis will be presented.

[1] C. Alexandrou et. al, http://arxiv.org/abs/0901.3457v1.

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