

Abstract Submitted
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Measurement of Single Target-Spin Asymmetry in Semi-Inclusive Negatively Charged Pion Electroproduction on a Transversely Polarized ^3He Target as an Effective Neutron Target CHIRANJIB DUTTA, University of Michigan, JEFFERSON LAB HALL A COLLABORATION — We measured the neutron target single spin asymmetry in the semi-inclusive deep inelastic $^3\text{He}^\uparrow(e, e'\pi^-)X$ reaction using a transversely polarized ^3He target. The experiment acquired data in Hall A at Jefferson Lab using a 40 cm long polarized ^3He target and an electron beam of 5.9 GeV. This first measurement on neutron transversity focuses on the valence quark region, $x = 0.13 \sim 0.41$, at $Q^2 = 1.31 \sim 3.10$ (GeV/c) 2 . Negatively charged pions were detected in the left high-resolution spectrometer in coincidence with the scattered electrons detected in the BigBite spectrometer. The data from this experiment, when combined with world data, will provide constraints on the Transversity, Siverson distribution functions and Collins fragmentation functions for both u -quark and d -quark in the valence region. Preliminary results of the neutron Siverson and Collins moments for the negatively charged pions will be presented for the first time with a summary of the polarized ^3He target performance.

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