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Measurement of Double Spin Asymmetry A_{LT} in Semi-Inclusive Pion Electroproduction on a Transversely Polarized ^{3}He Target JIN HUANG, Massachusetts Institute of Technology, JEFFERSON LAB HALL A COLLABORATION, JEFFERSON LAB E06-010 COLLABORATION — We recently measured the neutron double spin asymmetry $\mathcal{A}_{\mathcal{LT}}$ in the semi-inclusive deep inelastic $^3He^{\uparrow}(\overrightarrow{e}, e'\pi^{+/-})X$ reactions with polarized electron beam and a transversely polarized ^{3}He target. The measurement was performed in Jefferson Lab Hall A, using 6 GeV polarized electron beam scattering on a 40 cm polarized ^{3}He target. The produced pions were detected in the left high- resolution spectrometer in coincidence with the scattered electrons detected by the BigBite spectrometer. The kinematic coverage focused on the valence quark region, $x = 0.13 \sim 0.41$, at $Q^2 = 1.31 \sim 3.10$ (GeV/c)^2. This data, when combined with the world data, will provide constraints on the g_{1T}^q distribution functions, which describes longitudinal polarization of quarks in the transversely polarized target, for both u-quark and d- quark in the valence region. Experiment setup and preliminary data analysis progress will be presented in this talk.

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