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Measurement of Single Target-Spin Asymmetry in Semi-Inclusive Pion Electroproduction on a Transversely Polarized ^{3}He Target YI QIANG, Duke University, JEFFERSON LAB HALL A COLLABORATION, E06-010 COLLABORATION — We recently measured the neutron target single spin asymmetry in the semi-inclusive deep inelastic $^3He^{\uparrow}(e, e'\pi^{+/-})X$ reactions with a transversely polarized ^{3}He target. The experiment was performed at Jefferson Lab Hall A from October 2008 to February 2009 using a 40 cm polarized ^{3}He target. The pions were detected in the left high-resolution spectrometer in coincidence with the scattered electrons detected by the BigBite spectrometer. The kinematic coverage focuses on the valence quark region, $x = 0.13 \sim 0.41$, at $Q2 = 1.31 \sim 3.10$ (GeV/c)2. With good particle identification using a RICH detector and an aerogel threshold Cherenkov counter, data on the kaons were obtained at the same time. The data from this experiment, when combined with the world data, will provide constraints on the transversity and Sivers distributions on both u-quark and d-quark in the valence region.

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