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Measurement of Single Spin Asymmetries in Semi-Inclusive DIS reaction $n^\uparrow(e, e'\pi^+)X$ using Transversely Polarized ^3He Target KALYAN ALLADA, Jefferson Lab, HALL-A E06-010 COLLABORATION — Measurement of single-spin asymmetries(SSA) on transversely polarized targets gives an access to several interesting aspects of the transverse spin structure of the nucleon. We recently measured the neutron target SSA in the semi-inclusive deep inelastic reaction, $^3\text{He}^\uparrow(e, e'\pi^\pm/K^\pm)X$, with a transversely polarized ^3He target. The experiment was performed at the Jefferson Lab Hall A. The produced hadrons were detected in the high-resolution spectrometer in coincidence with the scattered electrons detected by the BigBite spectrometer. The kinematic coverage focuses on the valence quark region, $x = 0.1$ to 0.4 , at $Q^2 = 1$ to 3 $(\text{GeV}/c)^2$. Good particle identification was achieved using a RICH detector, an aerogel Cherenkov counter and time-of-flight detectors, which allowed for clean π^\pm and K^\pm detection. The data from this experiment, when combined with the world data, will provide constraints on the transversity and Sivers distributions on both u and d quarks in the valence region. In this talk we will present the first results of the neutron Collins and Sivers asymmetries in $n^\uparrow(e, e'\pi^+)X$ channel and discuss its implications.

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