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**Measurement of Single/Double Target-Spin Asymmetry in Semi-Inclusive Pion Electroproduction
on a Transversely Polarized ^3He Target¹**

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Measuring parton distribution functions (PDF) which represent the flavor and spin structure of nucleon is important to reveal the information of quantum chromodynamics in the confinement region. In particular, in parton model, the cross-section in the semi-inclusive deep inelastic scattering (SIDIS), can be written as the product of PDF and fragmentation function which describe the parton hadronized process due to color force. The JLab experiment E06-010 is focusing on measuring the target single/double spin asymmetry in the semi-inclusive deep inelastic $^3\text{He}(e, e'\pi^{+,-})X$ reaction with a transversely polarized ^3He target at JLab Hall A with a 5.89 GeV electron beam. The leading pions and scattered electrons were detected in coincidence by the left High-Resolution Spectrometers (HRS_L) at 16° and BigBite spectrometer at 30° , respectively. Kinematic coverage was focused on the valence quark region, $x \sim 0.1-0.4$, at $Q^2 \sim 1-3$ (GeV/c)². The Collins, Sivers and g_{1T} asymmetries of ^3He and neutron were extracted. The overview of the experiment and results will be presented. Furthermore, the 12 GeV program with SoLID spectrometer and future possibilities at an EIC will be briefly introduced.

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