Single-Spin Asymynetries at CLAS

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Single-spin asymmetries (SSA) in azimuthal distributions of final state particles in deep inelastic scattering (DIS) play a crucial role in the study of the spin structure of hadrons. They give access to some essentially un- explored physical observables, including transverse polarization distribution functions, generalized parton distribution functions and time-odd distribution and fragmentations functions. At low beam energies, when the virtual photon has a relatively large angle with respect to the initial spin direction, the measured single-target spin-dependent sin ϕ moment in the cross section for the longitudinally polarized target contain contributions from the tar- get spin components, both longitudinal and transverse with respect to the photon direction.

This Contribution presents latest results from Jefferson Lab's CLAS detector on beam and target SSA in single pion electro-production in the DIS regime ($Q^2 > 1GeV^2$, $W > 2GeV$) off a polarized NH_3 and unpolarized hydrogen targets. Large single-beam and single-target spin asymmetries were observed at large z (fraction of the virtual photon momentum carried by the produced pion), a domain where semi-inclusive and exclusive processes overlap in hard scattering.