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Target and Beam-Target Double Spin Asymmetry for Semi-Inclusive Deep Inelastic Scattering on Proton and Deuteron SUMAN KOIRALA, SEBASTIAN KUHN, Old Dominion University, CLAS COLLABORATION — Transverse momentum dependent parton distribution functions (TMDs) describe the transverse momentum and spin of the quarks and gluons inside a nucleon. The TMDs open a window on the contribution of the orbital angular momentum of the quarks and gluons to the total spin of the nucleon. The TMDs can be accessed from the target and double spin asymmetries of semi-inclusive deep inelastic scattering (SIDIS) reactions, where the asymmetries A_{UL} and A_{LL} are convolutions of the fragmentation functions and the TMDs. The EG1-DVCS experiment with CLAS at Jefferson Lab measured semi-inclusive pion production on longitudinally polarized proton and deuteron targets with polarized electrons of approximately 6 GeV. The target single spin and beam-target double spin asymmetries for these reactions are presented.

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