

Abstract Submitted
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Measurements of the $\cos\phi$ and $\cos2\phi$ Moments of the SIDIS Cross-section at CLAS NATHAN HARRISON, KYUNGSEON JOO, University of Connecticut, HARUT AVAKIAN, MAURIZIO UNGARO, Jefferson Lab, CLAS COLLABORATION — Measurements of the $\cos\phi$ and $\cos2\phi$ moments of the semi-inclusive deep inelastic scattering (SIDIS) cross-section were performed. The data set used was the E1-f run from the CEBAF Large Acceptance Spectrometer (CLAS) at Jefferson Lab which ran in 2003. The run used a 5.498 GeV longitudinally polarized electron beam and an unpolarized liquid hydrogen target. Two pion channels (π^+ and π^-) were studied over a broad kinematical range ($x = 0.1 - 0.6$, $Q^2 = 1.0 - 4.5 \text{ GeV}^2$, $z = 0.0 - 1.0$, and $P_T = 0.0 - 1.0 \text{ GeV}$). These measurements give insights into the transverse momentum dependence of parton distribution functions (PDFs) which describe the dynamics of quarks and gluons inside of the proton. This may give access to the quark orbital angular momentum contribution to the proton spin.

Nathan Harrison
University of Connecticut

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