

Abstract Submitted
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Dihadron Beam Spin Asymmetries and Helicity-Dependent Fragmentation in SIDIS at CLAS CHRISTOPHER DILKS, Duke University — Dihadron production in Semi-Inclusive Deep Inelastic Scattering (SIDIS) provides unprecedented access to hadron structure and to spin-orbit correlations in hadronization. Beam spin asymmetry measurements in dihadron production are sensitive to twist-3 collinear PDFs as well as dihadron fragmentation functions. In particular, the dihadron fragmentation function G_1^\perp has not yet been experimentally constrained, and describes the correlation of the fragmenting quark helicity with azimuthal angles of the hadron pair. The quark-jet hadronization model predicts a sizeable G_1^\perp and assumes a longitudinally polarized fragmenting quark recoils and acquires nonzero transverse polarization via a wormgear-type splitting. Measuring beam spin asymmetry modulations in various production channels, including charged and neutral pions as well as kaons, will probe the flavor dependence of G_1^\perp and other relevant distributions. Progress on the beam spin asymmetry measurements in dihadron production from electron-proton scattering at CLAS will be shown, and their potential impact on G_1^\perp extractions will be discussed.

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