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Type: **Talk**

Accessing target fragmentation at CLAS12 with multidimensional ep to $e'pX$ SSAs

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Studies of properties such as the azimuthal modulations of hadrons produced in the target fragmentation region serve as a test of our complete understanding of the different production mechanisms in SIDIS and provide additional information on QCD dynamics that are not accessible with hadron production in the current fragmentation region. We present the first multidimensional studies of beam single-spin asymmetries for semi-inclusive protons, $ep \rightarrow e'pX$, produced in the target fragmentation region that can be related to higher-twist fracture functions dictating the formation of protons out of the target remnant. The data were taken using the CLAS12 spectrometer at JLab with a longitudinally polarized 10.6 GeV electron beam incident on an unpolarized hydrogen target. A clear sign change has been observed in preliminary results that captures the transition between the target and current fragmentation regions and provides a possible criteria for the experimental separation of both hemispheres, opening a new avenue for studies of nucleonic structure.

Preferred track

Hadron Structure

Subfield

Nuclear experiment

Attending in-person?

Yes

On behalf of collaboration?

CLAS12

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