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SIDIS Single Pion Beam Spin Asymmetry measurements with CLAS 12

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The CLAS12 detector at Jefferson Laboratory (JLab) started data taking with a polarized 10.6 GeV electron beam, interacting with an unpolarized liquid hydrogen target in February 2018. The collected statistics enables a high precision study of the moment $A_{LU}^{sin(\phi)}$ corresponding to the polarized electron beam spin asymmetry in semi-inclusive deep inelastic scattering. $A_{LU}^{sin(\phi)}$ is a twist-3 quantity which provides information about the quark gluon correlations in the nucleon. The contribution will present a simultaneous study of all three pion channels (π^+ , π^0 and π^-) over a large kinematic range of z , x_B , P_T and Q^2 with virtualities Q^2 ranging from 1 GeV² up to 8 GeV². Based on the available statistics, a multidimensional analysis becomes possible.

Author: Dr DIEHL, Stefan (JLU Giessen and UCONN)

Presenter: Dr DIEHL, Stefan (JLU Giessen and UCONN)

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