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SIDIS Pion Beam Spin Asymmetries with CLAS 12 at 10.6 GeV

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The CLAS12 detector started data taking with a polarized 10.6 GeV electron beam at Jefferson Laboratory (JLab) this February. One of the first quantities which could be extracted from the new data is the moment $A_{LU}^{\sin(\varphi)}$ corresponding to the polarized electron beam spin asymmetry in semi-inclusive deep inelastic scattering. $A_{LU}^{\sin(\varphi)}$ is a twist-3 quantity which provides information about the quark gluon correlations. The study was performed with a 10.6 GeV longitudinally polarized electron beam and an unpolarized liquid hydrogen target. The talk will present a simultaneous study of all three pion channels (π^+, π^0 and π^-) over a large kinematic range with virtualities Q^2 ranging from 1 GeV² up to 8 GeV². The measurement in a large range of z, x_B, p_T and Q^2, including up to now not measured kinematic regions, enables a comparison with different reaction models. The results will be compared to previous studies at an electron beam energy of 5.5 GeV with CLAS6.