Neutral Pion SIDIS Multiplicity with CLAS12

Giovanni Angelini, The George Washington University

The CLAS12 spectrometer (JLab) is an ideal detector for the study of nucleon's imaging via the analysis of multidimensional distributions of final-state hadrons in semi-inclusive deep inelastic scattering (SIDIS). In the current fragmentation region, the structure functions parametrizing the cross-section can be expressed in terms of the convolution of universal functions. These universals functions are the so-called transverse momentum dependent partonic distribution functions and the fragmentation functions. The former describes quarks distribution in terms of their momenta while the latter describes the hadronization process of quarks.
The hadron electroproduction multiplicity, i.e., the measurement of normalized hadron yield in SIDIS, depends on the ratio of structure functions and can provide an insight on the hadronization process. In this talk, the multiplicity of neutral pion is shown on a subset of the data collected so far by CLAS12 using an unpolarized hydrogen target.