Contribution ID: **179** Type: **Talk**

Pion multiplicities from CLAS

Wednesday 27 September 2017 09:25 (20 minutes)

In this talk I will present preliminary results on π+, π- and π0 multiplicity ratios measured as a function of multiple kinematical variables in semi-inclusive DIS on three nuclei (C, Fe, Pb) normalized to deuterium . The series of measurements presented here were performed at Jefferson Lab with 5.014 GeV electron beam incident on a double-target system in which liquid deuterium and one of the solid targets were exposed simultaneously to the beam. These measurements will further be extended in the approved experiment E12-06-117 following JLab upgrade to 12 GeV.

The goal of this experiment is to study hadronization process by providing new insights on parton propagation inside nuclear medium and formation of hadrons. This topic has been of interest to multiple communities such as Drell-Yan measurements at Fermilab, heavy-ion collisions in RHIC and LHC and SIDIS measurements from HERMES and CLAS. The advantages of SIDIS are well understood nuclear medium and its ability to investigate time-dependence of hadronization by embedding it in nuclei of increasing size. It is to be hoped that these studies, once matured, can influence the interpretation of what is seen in the hot dense systems (LHC), in addition to their intrinsic interest for QCD.

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Session Classification: QCD and hadron structure

Track Classification: QCD and hadron structure