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Hadronization in Semi-Inclusive DIS from CLAS at Jefferson Lab

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In this talk I will present preliminary results on π^+ , π^- and π^0 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 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 be further extended in the approved experiment at 11 GeV. The goal is to provide new insights on parton propagation inside nuclear medium and expand current knowledge on hadronization mechanisms. This topic has been of interest to multiple communities: Drell-Yan measurements at Fermilab, heavy-ion collisions in RHIC and LHC and SIDIS measurements from HERMES and CLAS, all of which contribute different kind of information on short distance processes. The advantages of SIDIS are its well understood nuclear medium and ability to investigate time-dependence of hadronization by embedding it in nuclei of increasing size. It is to be hoped that the studies of cold QCD matter, 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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