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Exploring the potential role of diquarks in hadronization using SIDIS on nuclear targets

Semi-Inclusive Deep Inelastic Scattering on nuclei offers a new way to gain microscopic information about the mechanisms of parton propagation and hadron formation in QCD. The interactions with the nuclear medium of the partonic and hadronic participants in the hadronization process can reveal features of that process at the femtometer distance scale. New data from CLAS on baryon hadronization in nuclei for the lambda baryon and for the proton may offer the potential of understanding more about the role of diquark correlations as a feature of nucleon structure, and more generally the in-medium interaction of colored qq pairs in the final state. Comparisons of the new data to the predictions of the GiBUU model, which generally describes meson production from nuclei quite well, intriguingly suggest that our picture of baryon production from nuclei is incomplete.

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Track Classification: Structure of hadrons