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Probing Diquark Structure via Lambda Fragmentation Studies at Jefferson Lab

Studies based on employing hard probes and pioneering processes such as semi-inclusive deep inelastic scattering (SIDIS) on atomic nuclei are cogent in accessing medium modifications of their underlying structure, exploring the hadronization mechanisms, and studying confinement dynamics in cold nuclear matter. Indeed, carrying out such studies in a clean environment effectively probes the fragmentation mechanisms related to color propagation and hadron formation and, thus, its associated time-distance scales. In this talk, I will highlight recent hadronization results from Jefferson Lab, focusing on the first-ever SIDIS study of Lambda hyperon in the current and target fragmentation regions. These new results, alongside the lately collected CLAS12 quark propagation data, will effectively enhance our understanding of quark-diquark correlations in the nucleon, light, and strange baryon structures.

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