

# $\Lambda$ Fragmentation Study in the Current and Target Regions using CLAS

Taya Chetry

Mississippi State University

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## **Abstract**

One of the basic phenomena of the Quantum Chromodynamics can be attributed to the so-called hadronization or fragmentation studies. In the hadronization process, the energetic struck quark transforms into color-neutral hadrons, effectively providing a probe to the confinement dynamics as well as the characteristic time-scales involved. These time-scales are significant to the elucidate our understanding of the color-neutralization and subsequent non-perturbative formation of the observed hadrons. This talk will report the first-ever analysis of the semi-inclusive deep inelastic scattering of  $\Lambda$  hyperons in the current and target fragmentation regions using the Jefferson Lab 5-GeV CLAS data-sets, which were taken with various nuclear targets during the EG2 experiment. Results on multiplicity ratios and the transverse momentum broadening will be presented. The results from this work along with other EG2 meson studies exhibit a good benchmark for the upcoming CLAS12 color propagation measurements.

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