

# Perspective of spin-observable measurements in semi-inclusive DIS strangeness production with an 11 GeV electron beam at Jefferson Lab

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With the planned energy upgrade and a large acceptance CLAS12 detector operated at the high luminosity of  $10^{35} \text{ cm}^{-2} \text{ s}^{-1}$ , Jefferson Lab provides unique opportunities to study strangeness productions (Lambda hyperon and phi meson in particular) in semi-inclusive DIS reactions in the current fragmentation regime ( $x > 0, z > 0.5$ ).

Based on the LUND Monte Carlo model and the recent HERMES data, we carried out numerical estimations of the following physics observables for Lambda production: 1. lepton to Lambda longitudinal spin transfer, 2. beam-target double-spin asymmetries, 3. nucleon to Lambda spin transfer, 4. Induced Lambda polarization on an unpolarized target, 5. transverse Lambda polarization on a transversely polarized target. The projected statistical accuracies are improved by at least an order of magnitude compared with the recent data of COMPASS and HERMES. Sensitivities to strange quark polarizations through double-spin asymmetry measurements in semi-inclusive DIS phi meson production are also studied.