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Exclusive Hyperon Production at CLAS

DANIEL CARMAN, Jefferson Laboratory

This talk will provide an overview of the exclusive hyperon production experiments being carried out by the CLAS Collaboration at Jefferson Laboratory. The program is designed to measure cross sections and a complete set of beam, target, and recoil hyperon polarization observables for both $K\Lambda$ and $K\Sigma$ final states with beam energies up to 6 GeV. These data will span a broad kinematic range in momentum transfer Q^2 and invariant energy W, and nearly the full center-of-mass angular range of the kaon. Analyses of data on both proton and neutron targets are underway or planned for the near future involving polarized beams (longitudinally polarized electrons, circularly and linearly polarized photons) and polarized targets (longitudinally and transversely polarized). The main goal of this series of measurements is to provide precision data needed to disentangle the resonant and non-resonant amplitudes in the intermediate state to uncover baryon resonances that couple to the strangeness channels $(N^* \to K\Lambda, K\Sigma, \Delta^* \to K\Sigma)$. This will improve our understanding of the nucleon excitation spectrum, and hence, probe the effective degrees of freedom of the nucleon. These data will also serve to improve our understanding of the dynamics underlying strangeness production in general. Over the next several years it is expected that a full coupled-channels analysis, including hadroproduction data, as well as data with both real and virtual photons, will be completed by several groups, including the Excited Baryon Analysis Center (EBAC) at Jefferson Laboratory. The precision data from CLAS will be a crucial input for these analyses. Within the next five years, the CLAS facility will be significantly upgraded for use with the higher-energy electron beams available with the 12-GeV Jefferson Laboratory energy upgrade. The future of the strangeness physics program with the new CLAS12 facility will be highlighted.