

Abstract Submitted
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Excited Baryon Structure Using KY Exclusive Reactions With CLAS12 DANIEL CARMAN, JLab, CLAS COLLABORATION — Studying excited nucleon structure via exclusive KY electroproduction will be an important tool for exploring the non-perturbative strong interaction. Electrocouplings for low-lying N^* states (<1.7 GeV) have been determined from analyses of CLAS πN and $\pi\pi N$ data. This work made clear that consistency of independent analyses of exclusive channels with different couplings and non-resonant contributions is essential to have confidence in the extracted results. In terms of hadronic coupling, most high-lying N^* states preferentially decay through the $\pi\pi N$ channel instead of πN . Data from the KY channels will therefore be critical to provide an independent analysis to compare the extracted electrocouplings for the high-lying N^* states against those determined from the $\pi\pi N$ channel from an already approved CLAS12 12-GeV experiment. A new experiment that will focus on $N^* \rightarrow KY$ decays using CLAS12 at JLab will be discussed that will measure differential cross sections to be used as input to extract the $\gamma_v NN^*$ transition form factors for the most prominent N^* states in the range of invariant energy W from 1.6 to 3 GeV in the virtually unexplored domain of momentum transfers Q^2 up to 12 GeV².

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