

Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Separated Structure Functions in $K^+\Lambda$ and $K^+\Sigma^0$ Electroproduction DANIEL S. CARMAN, Ohio University, CLAS COLLABORATION — Data analysis from an extensive program of kaon electroproduction from the proton utilizing electron beams from 2.5 to 5.7 GeV is presently underway in Hall B at Jefferson Laboratory. Cross sections for the $K^+\Lambda$ and $K^+\Sigma^0$ final states have been measured using the CLAS spectrometer. The data reported here were collected at beam energies of 2.6 and 4.2 GeV and span a range of kinematics in W from threshold to 2.5 GeV, Q^2 from 0.5 to 2.5 (GeV/c)², while covering nearly the full center-of-mass angular range for the kaon. As part of this analysis, the structure functions $\sigma_U = \sigma_T + \epsilon\sigma_L$, σ_{TT} , and σ_{LT} have been extracted from the ϕ - and ϵ -dependent differential cross sections. These structure functions have strong sensitivity to disentangle the resonant contributions in the s , t , and u reaction channels from the non-resonant strength. Differences in the production dynamics for the Λ and Σ^0 hyperons will be discussed and the data will be compared with available theoretical calculations for these processes. These measurements are part of the larger N^* program of CLAS.

Daniel S. Carman
Ohio University

Date submitted: 25 May 2005

Electronic form version 1.4