

1 Title

Determination of the Polarization Observables C_x , C_z , and P_y for the Quasi-Free Mechanism in the reaction $\vec{\gamma}d \rightarrow K^+ \vec{\Lambda} n$

2 Abstract

Besides the reaction $\vec{\gamma}p \rightarrow K^+ \vec{\Lambda}$, the Quasi-Free (QF) mechanism in the reaction $\vec{\gamma}d \rightarrow K^+ \vec{\Lambda} n$ provides an alternative means to study photoproduction of strangeness off the proton leading to the $K^+ \Lambda$ state. In this work, we determine the polarization transfers, C_x and C_z , from circularly polarized photons to the Λ , and the hyperon recoil polarization, P_y , for the QF mechanism in the reaction $\vec{\gamma}d \rightarrow K^+ \vec{\Lambda} n$. The observables are obtained from data taken with the CLAS detector at the Thomas Jefferson National Accelerator Facility during the E06-103 (g13) experiment. The extracted observables are compared to published CLAS results on the reaction $\vec{\gamma}p \rightarrow K^+ \vec{\Lambda}$. In the talk, effects of the Fermi momentum of the bound proton on the extracted observables will be discussed. This work is funded in part by the U.S. NSF under grant PHY-125782.