

Induced polarization of Lambda(1116) in kaon electroproduction

We have measured the induced polarization of the Lambda(1116) in the reaction $ep \rightarrow e'K^+\Lambda$, detecting the scattered e' and K^+ in the final state along with the proton from the decay $\Lambda \rightarrow p\pi^-$. This study used the CLAS, which allowed for a large kinematic acceptance in invariant energy W ($1.6 < W < 2.7$ GeV) and covered the full range of the kaon production angle at an average momentum transfer $Q^2 = 1.896$ GeV². In this experiment a 5.5 GeV electron beam was incident upon an unpolarized liquid-hydrogen target. We have mapped out the W and kaon production angle dependencies of the induced polarization and found striking difference from photoproduction data over most of the kinematic range. We also found that the induced polarization is essentially Q^2 independent in the kinematic domain, suggesting that somewhere below the Q^2 covered here, there must be a strong Q^2 dependence.

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