

$K^0\Lambda$ Photoproduction Studied with An Electromagnetic Calorimeter FOREST

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Simultaneous photoproduction of K^0 and Λ has been studied at the Research Center for Electron Photon Science, Tohoku University, Japan with the electromagnetic calorimeter complex FOREST. The $\gamma d \rightarrow K^0\Lambda p$ events were detected with the entire range for the K^0 emission angle in the γn center-of-mass frame. The measured differential cross sections show flat shapes at the near-threshold region and backward-peaking structures in the higher energy region up to $E_\gamma = 1.15$ GeV.

KEYWORDS: $K^0\Lambda$, photoproduction, baryon spectroscopy, . . .

1. Introduction

Kaon photoproduction is an excellent tool for studying highly excited baryons, which hardly couple with the πN channel. Recently, many experimental groups have investigated the $\gamma p \rightarrow K^+\Lambda$ reaction (e.g., [1–4]). The large t -channel contributions in this reaction make it complicated to extract the s -channel resonance (N^*) contributions. The well-studied reaction $\pi^- p \rightarrow K^0\Lambda$ also exhibits