

Abstract Submitted
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Photoproduction of $\Lambda(1115)$ on a deuteron at threshold energies¹

BRIAN BECKFORD, American Physical Society, NKS2 COLLABORATION —
The electromagnetic production of strange mesons and baryons continues to be a growing topic in more recent years due in part to the continual increase of beam energies at accelerator facilities. It is well known that production of strangeness on nucleons provides details about hadronic structures including form factors. We present results on cross sections for Λ in the $\gamma d \rightarrow \Lambda X$ reaction measured at the Research Center for Electron Photon Science (ELPH), at tagged photon energies between 0.8-1.08 GeV. The experiment was successfully performed using the upgraded Neutral Kaon Spectrometer (NKS2+) where the produced Λ was measured by the $p\pi^-$ decay channel. Momentum and angular distributions were measured in addition to the integrated cross section for forward Λ scattering angles. From integrated measurements of Λ from $\gamma d \rightarrow \Lambda X$, total cross sections of $\gamma d \rightarrow K^0 \Lambda p$ were estimated. The results of the Saclay-Lyon A (SLA) [1] and Regge-Plus-Resonance (RPR-2007) model [2] calculations compared favorably to the data.

[1] T. Mizutani, C. Fayard, G. H. Lamot, and B. Saghai. Phys Rev. C 58,75 (1998).

[2] P. Vancraeyveld et.al. Nucl. Phys. A 897,42 (2013).

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Brian Beckford
American Physical Society

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