Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Study of Radiative Hyperon Decays in the Reaction $\gamma p \to K^+\Lambda\gamma$ at GlueX KEVIN LUCKAS, JAMES RITMAN, SUSAN SCHADMAND, Institut fuer Kernphysik - Forschungszentrum Juelich, GLUEX COLLABORATION — Radiative decays of hyperons are sensitive to their internal structure and a clean probe of their underlying SU(3) wave function. So far only a few measurements of radiative decays of excited hyperons have been published. In this study we focus on the radiative decay of $\Sigma^0(1385) \to \Lambda\gamma$, where the excited hyperon is produced in photoproduction. The branching ratio of this particular decay has previously been measured in [1]. The GlueX experiment at Jefferson Lab provides excellent opportunities to study excited state hyperons in general and the reaction above in particular in photoproduction with a photon beam of $6.0-11.6$ GeV incident on a liquid hydrogen target with high statistics. This data sample is expected to have up to an order of magnitude more statistics than previously available. In this talk, we will discuss the ongoing analysis effort for the reaction $\gamma p \to K^+\Sigma^0(1385) \to K^+\Lambda\gamma$, emphasizing the reduction of the dominant background $\Sigma^0(1385) \to \Lambda\pi^0$.

References

[1] Electromagnetic Decay of $\Sigma^0(1385)$ to $\Lambda\gamma$, D. Keller et. al (The CLAS collaboration), Phys. Rev. D 83, 072004, 2011

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Date submitted: 11 Jan 2021 Electronic form version 1.4