

Abstract Submitted
for the APS April Meeting 2023 Meeting of
USB Dept. of Physics and Astronomy

Sorting Category: (Experimental)

Photoproduction of Λ^* resonances at CLAS UTSAV
SHRESTHA, KYUNGSEON JOO, University of Connecticut — We present the study of the reaction $\gamma p \rightarrow K^+ \Lambda^*$ using the photoproduction data from the CLAS-*g12* experiment performed in Hall B of Jefferson Laboratory. The photoproduction of the hyperon resonances $\Lambda(1405)1/2^-$ and $\Lambda(1520)3/2^-$ has been well studied, but little is known about photoproduction to the higher-mass resonances $\Lambda(1670)1/2^-$ and $\Lambda(1690)3/2^-$. Both pairs of resonances are spin-orbit partners and are rated as 4-star (well-known) by the Particle Data Group. In the quark model, the $\Lambda(1405)$ and $\Lambda(1520)$ resonances are assigned to the SU(3) singlet, where the $\Lambda(1670)$ and $\Lambda(1690)$ are assigned to the octet. The decay of Λ^* resonances, $\Lambda(1520)$, $\Lambda(1670)$, and $\Lambda(1690)$, into two exclusive channels, $\Sigma^+ \pi^-$ and $\Sigma^- \pi^+$, is studied from the detected K^+ , π^+ , and π^- particles. The $\Lambda(1520)$ differential cross sections are in good agreement with the previous CLAS measurements and are extended to higher photon energies. We present cross sections for the first time using photoproduction to the higher mass resonances, $\Lambda(1670)$ and $\Lambda(1690)$.

☒ Prefer Oral Session
☐ Prefer Poster Session

Utsav Shrestha
ushrestha@uconn.edu
University of Connecticut

Date submitted: January 5, 2023

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