

Abstract Submitted  
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**Elastic Lambda-proton Scattering in CLAS** JOHN PRICE, California State University, Dominguez Hills, CLAS COLLABORATION — The  $\Lambda$ -proton reaction is important to our understanding of the structure of the proton and the nature of the strong nuclear force. Most previous measurements used bubble chambers with kaon beams to produce the  $\Lambda$  beam, which then interacted with a second proton inside the chamber. The  $\Lambda$  can also be produced in the process  $\gamma p \rightarrow K^+ \Lambda$ , which has been studied at Jefferson Lab by the CLAS Collaboration. The long decay length of the  $\Lambda$  allows it to interact with a second proton in the target, leading to the process  $\Lambda p \rightarrow \Lambda p$ . The large acceptance of CLAS makes it a good choice for the study of this final state. A data-mining project was initiated with the CLAS g12 run, which used a tagged photon beam with  $3.6 \leq E_\gamma \leq 5.4$  GeV incident on a 40-cm liquid hydrogen target. The apparent non-conservation of baryon number in the final state leads to a very stringent cut which results in a good signal for this process. Future work will look at the possibility of increasing the detection rate for this process, using the upgraded CLAS12 detector, along with possible improvements to the target design. This talk will discuss the motivation for this work, the analysis and initial results, and the possibilities for future studies.

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