

Abstract Submitted
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Conceptual Design and Data Acquisition Techniques (JLab Hall C 12 GeV Kaon Aerogel Detector)¹ NATHANIEL HLAVIN, Catholic University of America — The additional flavor degree of freedom in the $H(e,e'K^+)\Lambda$ and $H(e,e'K^+)\Sigma^0$ reactions provides a unique opportunity to study the reaction mechanism underlying strangeness production and the transition from hadronic to partonic degrees of freedom in exclusive processes. However, due to experimental challenges the potential of these reactions has not been fully exploited to date. One such challenge is the separation of kaons from pion and proton backgrounds. At high momenta, a kaon aerogel Cerenkov detector is the simplest and most economical way of addressing this issue. At CUA, we are building such a detector for Hall C at the 12 GeV Jefferson Lab. Desirable properties are high light output for kaons, and good efficiency in the collecting and converting the light using cost-effective PMTs. I will present the findings from physics simulations performed for the conceptual design and ongoing component testing, with focus on data acquisition techniques.

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