

Abstract Submitted  
for the DNP12 Meeting of  
The American Physical Society

**Aerogel Cherenkov Detector Prototype Experiments<sup>1</sup>** LAURA ROTHGEB, The Catholic University of America — Studying the additional flavor degree of freedom in the  $H(e,e'K^+)$  and  $H(e,e'K^+)$  reactions allows for exceptional insight into the transition from hadronic to partonic degrees of freedom in exclusive processes, specifically the reaction mechanism underlying strangeness production. To carry out strangeness physics experiments, the Nuclear Physics Group at Catholic University of America is building an Aerogel Cherenkov detector to be used at Jefferson Lab. To study the detector performance a prototype was built and experiments were carried out using several component configurations. One important aspect of the prototype is the photocathode uniformity of the large diameter photomultiplier tube: its effect on the detector is best studied with the prototype using the aerogel material and reflective detector box for Cerenkov photons in diffusive reflections. Another important aspect of the detector performance, therefore, is the effect of different reflective materials for the detector box wall lining. In this presentation I will present the results from these tests of the effect of the photomultiplier tubes and reflective surfaces on overall detector performance, as well as the modeling of the detector in the GEANT4 framework.

<sup>1</sup>Work supported in part by NSF grants PHY-1019521 and PHY-1039446.

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Date submitted: 27 Jul 2012

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