Abstract Submitted
for the DNP08 Meeting of
The American Physical Society

Photoproduction of Neutral Kaons on Deuterium[1] KABI R. BANTAWA, D.M. MANLEY, Kent State University, THE CRYSTAL BALL AT MAMI, TAPS, AND A2 COLLABORATION — The $\gamma n \to K^0\Lambda$ reaction on a liquid deuterium target was measured in the A2 Hall of the MAMI-C electron accelerator facility at the Institut für Kernphysik in Mainz, Germany. An incident electron beam of energy 1.5 GeV was directed on a 10-μm copper radiator to produce a *bremsstrahlung* photon beam that was tagged using the Glasgow Photon Tagger. The final-state K^0 and Λ were identified by their decays $K^0 \to 2\pi^0$ and $\Lambda \to \pi^0 n$, respectively. These three π^0s were reconstructed by detecting and analyzing the six photons resulting from the π^0 decays using the Crystal Ball multiphoton spectrometer and the TAPS detector as a forward wall. This combined detector system covered nearly 4π in solid angle. Kinematic fitting was used to select good events. This reaction is expected to shine light on isospin-1/2 nucleon resonances in the 1.7-GeV mass range. An experimental overview and preliminary results for differential and integrated cross sections will be presented.

[1]This work was supported in part by the U.S. DOE Grant No. DE-FG02-01ER41194.

Kabi R. Bantawa
Kent State University

Date submitted: 25 Jun 2008 Electronic form version 1.4