Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Photoproduction of neutral kaons on deuterons in the threshold region KYO TSUKADA, Tohoku Univ., NKS COLLABORATION — Until now, the investigation of kaon photo-/electro-production have been carried out in $p(\gamma, K^+)\Lambda$, $p(\gamma, K^+)\Sigma^0$ and $p(\gamma, K^0)\Sigma^+$ reactions among six isospin channels. However, no data have been measured for the other three channels on a neutron. The elementary processes of strangeness photoproduction are far from well understood. It is believed that measurements of these three strangeness production channels provide much information on the strangeness photoproduction mechanism. In particular, the $n(\gamma, K^0)\Lambda$ reaction is expected to play an essential role since it is unique in the sense that no charge is involved. Therefore, we carried out the experiment of the $d(\gamma, K^0)$ reaction in the threshold region, $E_\gamma = 0.8 \sim 1.1$ GeV. K^0's were measured in $\pi^+\pi^-$ decay mode by Neutral Kaon Spectrometer (NKS) which we installed in the Laboratory of Nuclear Science of Tohoku University (LNS-Tohoku). K^0 momentum spectra were compared with theoretical spectra calculated assuming representative isobar models. The present experiment demonstrated a usefulness of neutral kaon detection for the investigation of photo strangeness production reaction.

Kyo Tsukada
Tohoku Univ.

Date submitted: 25 May 2005 Electronic form version 1.4