Abstract Submitted
for the APR12 Meeting of
The American Physical Society

Hypernuclei production experiment E01-011 at Jefferson Laboratory Hall C by (e, e'K^+) reaction YUNCHENG HAN, Hampton University, HKS/HES COLLABORATION — The experiment E01-011 was performed at JLab Hall C in 2005 to investigate high precision Λ hypernuclei spectroscopy.The experimental setup consists of splitter magnet, Kaon spectrometer and electron spectrometer with elements compacted closely together to maximum the production yield. The electric current of splitter magnet was over loaded for tuning the beam in the experiment. This led to the saturation of the splitter magnetic field and cross talk of the leakage field among spectrometer element, which deformed the magnetic optics of spectrometer. Previous analysis started with an initial optics slightly modified from the designed one, and relied on the mathematic method tune to compensate the residual. Since only masses of Λ and Σ hyperons were reliable for the mathematic method optics tune, this may introduce extra uncertainties. A new optics was introduced based on the designed magnetic map by shift the geometric position and introduce asymmetric functions. The over all agreement of sieve slit hit pattern,independence of Λ mass on kinematics were achieved by use the optics even without any mathematic method optics tune. The Λ event counts for CH_2 target data was obtained 10% more comparison with the previous analysis.

Chunhua Chen
Hampton University

Date submitted: 05 Jan 2012 Electronic form version 1.4