Abstract Submitted
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CLAS g10 Analysis on Single Photopion Productions from Deuterium[1] WEI CHEN, Duke University/TUNL — Photopion productions from nucleons are essential probes of the transition from meson-nucleon degrees of freedom to quark-gluon degrees of freedom in exclusive processes. The cross sections of these processes are also advantageous, for the investigation of the oscillatory behavior around the quark counting prediction, since they decrease relatively slower with energy compared with other photon-induced processes. Recent data from JLab experiment E94-104 [1,2] show dramatic change in the scaled differential cross-section from the $\gamma n \to \pi^- p$ and $\gamma p \to \pi^+ n$ processes in the center of mass energy between 1.8 GeV to about 2.4 GeV. We are carrying out a CLAS approved analysis [3] of the JLab CLAS g10 data on the $\gamma n \to \pi^- p$ to investigate this dramatic behavior in much finer photon energy bins. Furthermore, the angular dependence of the scaling behavior for this process will also be studied in detail. We will report the status of the analysis in this presentation.

References:
[1] L.Y. Zhu *et al.*, Phys. Rev. Lett. **91**, 022003 (2003).
[2] L.Y. Zhu *et al.*, Phys. Rev. C **71**, 044603 (2005); nucl-ex/0409018.
[3] http://www.tunl.duke.edu/∼mep/clas/caa_pion.pdf

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