

Abstract Submitted  
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**High Energy Pion Photoproduction from Nucleons in the Giessen Boltzmann-Uehling-Uhlenbeck Model<sup>1</sup>** PRAJWAL MOHANMURTHY, Mississippi State University — For long, the transitions between perturbative and non-perturbative regimes of QCD have been of interest in nuclear physics. One of the methods used to study these transitions is to look for the onset of predictive QCD laws such as the quark counting rule. Measuring the differential cross section of certain exclusive reactions (such as pion photo production) has been one of the prime methods of investigating quark counting rules. The CEBAF Large Acceptance Spectrometer (CLAS) in Hall B at the Jefferson Lab (JLAB) has been used to measure the cross sections of pion photo production reactions. These measurements can be used to better understand the scaling laws. Although the cross-section does show scaling behavior, the onset of scaling is at unusually low energies and an unexplained sharp drop in the cross-section is observed just before the onset of scaling. There is a lack of theoretical calculations of pion photo production cross-section at these energies. The model known as the Giessen Boltzmann-Uehling-Uhlenbeck (GiBUU) model has been used to calculate the pion photo-production cross-section and it was compared with the CLAS measurements. The preliminary results shall be presented.

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