Abstract Submitted
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Search for the Onset of Color Transparency (CT) in Protons in Hall C at upgraded 12 GeV Jefferson Lab[1] DEEPAK BHETUWAL, Mississippi State University — CT is a unique prediction of QCD where the final (and/or initial) state interactions of hadrons with the nuclear medium are suppressed for exclusive processes at high momentum transfers. While this phenomenon has been observed for mesons, there has never been a conclusive observation for baryons. A clear signal of CT for baryons would be the first evidence of baryons fluctuating to a small size in the nucleus, and the onset would show the transition from partonic picture to quark-gluon degrees of freedom. The experiment E12-06-107 searching for the onset of CT in protons was completed in Hall C at Jefferson Lab using the recently upgraded 12 GeV e^- beam. It used HMS and new SHMS spectrometers in coincidence to measure the ^{12}C(e,e'p) proton knockout reaction. Data were collected on a ^{12}C target over the range of $Q^2 = 8\ \ 14.2$ $(GeV/c)^2$ covering the region where a previous A(p,2p) experiment at BNL had observed an enhancement. Additional data on a ^{1}H target were collected to determine the elementary process. A rise in the Proton Transparency (PT) as a function of Q^2 is predicted to be a signature of the onset of CT. This talk will summarize the status of the analysis, detail the systematic uncertainties calculation, and present the preliminary results.

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