

The Search for the Color Transparency in Hall C at Jefferson Lab

Wednesday, 30 May 2018 18:00 (25 minutes)

Color transparency (CT) is a fundamental phenomenon of QCD postulating that at high momentum transfer hadrons fluctuate to a small color neutral transverse size in the nucleus, and final state interactions within the nuclear medium are suppressed. CT is observed experimentally as a rise in the measured nuclear transparency as a function of the momentum transferred. While CT has been observed for mesons, it remains unconfirmed in baryons. Observation of CT in baryons would provide a new handle for understanding the nuclear strong force and the first observations of hadrons fluctuating to a small size in the nucleus. An enhancement in the nuclear transparency was observed in $A(p, 2p)$ reactions at Brookhaven. This experiment seeks to confirm the measurement of proton transparency as well as to measure the onset. During the spring of 2018, this experiment was the first to run in Hall C at Jefferson Lab using the recently upgraded 12 GeV electron beam and obtained four kinematic points covering the region where Brookhaven previously observed an enhancement. This experiment used the High Momentum Spectrometer (HMS) and Super High Momentum Spectrometer (SHMS) in coincidence to measure $A(e, e'p)$. This talk will summarize the status of the experiment since the completion of data taking this spring.

E-mail

hszumila@jlab.org

Collaboration name

E12-06-107 Collaboration

Funding source

U.S. DOE Grant Number: DE-FG02-07ER41528

Primary author: SZUMILA-VANCE, Holly (Jefferson Lab)

Presenter: SZUMILA-VANCE, Holly (Jefferson Lab)

Session Classification: Nuclear Forces and Structure, NN Correlations, and Medium Effects

Track Classification: NFS