



Searching for the onset of color transparency

Holly Szumila-Vance

Jefferson Laboratory

Color transparency (CT) is a fundamental phenomenon of QCD postulating that at high momentum transfer, one can preferentially measure hadrons that fluctuate to a small color neutral transverse size in the nucleus, and final state interactions within the nuclear medium are suppressed. Observation of the onset of CT indicates the transition between partonic and hadronic degrees of freedom in the nucleus. CT is observed experimentally as a rise in the measured nuclear transparency as a function of the momentum transferred. The most recent search for the onset of CT used the recently upgraded 12 GeV electron beam at Jefferson Lab in Hall C in the spring of 2018 and sought to observe the CT signal for baryons. This experiment used the High Momentum Spectrometer (HMS) and Super High Momentum Spectrometer (SHMS) in coincidence to measure $A(e,e'p)$ on a carbon target and obtained four kinematic points at momentum transfer Q^2 from 8-14.3 $(\text{GeV}/c)^2$. This talk reviews previous experimental searches for CT and presents the status of the recent Hall C measurement.

Tuesday, September 15, 2020

4:10 pm

Video Call Link: [Click Here](#) (pass: INPP)