

Abstract Submitted
for the APR21 Meeting of
The American Physical Society

Studying Nucleon Structure in $A = 3$ Nuclei using Double Spectator Tagging at the EIC¹ JACKSON PYBUS, IVICA FRII, Massachusetts Institute of Technology, DIEN NGUYEN, Thomas Jefferson National Accelerator Facility — Due to the lack of free neutron targets, the structure functions of the neutron are determined using deuterium or ^3He targets. In such experiments, nuclear effects can lead to very large model dependencies in interpreting data. Experiments on the deuteron, such as BONUS in Hall B of Jefferson Lab, seek to minimize the model dependencies by tagging low-momentum recoiling protons to ensure that the struck neutron was nearly on-shell. To date, such a technique has not been possible with ^3He , which is the preferred target for examining neutron spin structure via polarized scattering. We will show that, with the advent of the Electron-Ion Collider and its unique far-forward detection capabilities, it will be possible to tag on recoil protons with low momentum in the ion rest frame. This will allow a determination of neutron spin structure with far less model-dependence, as well as to further our understanding of the EMC effect by tagging high-momentum recoil protons.

¹Jefferson Lab EIC Fellowship Program

Jackson Pybus
Massachusetts Institute of Technology MIT

Date submitted: 08 Jan 2021

Electronic form version 1.4