Abstract Submitted
for the DNP19 Meeting of
The American Physical Society

Measuring Tensor Spin Observables with the EIC KARL SLIFER, ELENA LONG, University of New Hampshire — Several experiments at Jefferson Lab are planned which will explore the tensor structure of spin-1 systems. Conventional nuclear mechanisms can not explain the existing data measured for the tensor structure function b_1. E12-13-011 will measure b_1 using a solid deuterated polarized target, probe the tensor-polarized quark and antiquark distribution functions, and potentially provide a unique and unambiguous signature of hidden color. E12-15-005 will measure the tensor asymmetry A_{zz} in the $x > 1$ region, to explore the nature of short-range correlations in nuclei. This provides a unique tool to experimentally constrain the ratio of the S- and D-state wavefunctions at large momentum, which has been an ongoing theoretical issue for decades. The Electron Ion Collider is a natural facility to extend and improve these measurements. We will discuss the feasibility of measuring tensor spin observables at the EIC and compare the potential EIC measurements to world data and the planned Jefferson Lab experiments.

Karl Slifer
University of New Hampshire

Date submitted: 01 Jul 2019 Electronic form version 1.4