

Abstract Submitted
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Nucleon transverse spatial and momentum structure with the Neutral Particle Spectrometer at Jefferson Lab Hall C¹ ANDRES VARGAS, TANJA HORN, The Catholic University of America, NPS COLLABORATION — A representation of the proton's true inner structure requires one to describe orbital angular momentum, and important aspect for nucleon spin, for which one needs to describe the correlation between the momentum and spatial coordinates. A three-dimensional description of the nucleon has been developed through the Generalized Parton Distributions (GPDs) and the Transverse Momentum-Dependent parton distributions (TMDs). The tomography of the nucleon is one of the flagship science programs at the Jefferson Lab and the characterization of the anticipated GPD and TMD behavior as enabled by the Neutral Particle Spectrometer in Hall C is an important aspect. The NPS will allow accurate access to measurements of the hard exclusive and semi-inclusive scattering processes. The default readout of the NPS PbWO₄-based calorimeter will be with conventional photomultipliers. However, reading out with SiPMs or other sensors with tolerance to radiation and magnetic fields may have advantages. In this talk we will review the experiment requirements and discuss an alternative readout system with silicon-based sensors.

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Andres Vargas
Catholic Univ of America

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