

Abstract Submitted
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Exclusive Measurement of Deeply Virtual Compton Scattering off ^4He NATHAN BALTZELL¹, Thomas Jefferson National Accelerator Facility, CLAS COLLABORATION — Deeply virtual Compton scattering and meson production are proven prime reactions to progress our understanding of partonic structure via Generalized Parton and Transverse Momentum Distribution frameworks. Their extension to nuclei is of particular interest, with the possibility of revealing new information on the modification of partonic structure in nuclear media. An ideal candidate is ^4He due to its simplicity and high density, with spin=0 and isospin=0 resulting in only one contributing GPD at leading twist. We performed an experiment in Hall-B at Jefferson Lab with longitudinally polarized 6 GeV electrons incident on a 6 atm, long, gaseous ^4He target in a 4 T solenoid field. The large acceptance CLAS detector system was augmented by a lead tungstate calorimeter for forward photons. A new radial time projection chamber with cylindrical GEM amplification provided nuclear recoil detection. The first exclusive measurement of DVCS off ^4He will be presented, with Q^2 and x_B in the ranges 1.0-2.3 GeV² and 0.1-0.25. Extractions of beam spin asymmetries and the Compton form factor will be discussed, as well as a simultaneous measurement of π^0 production.

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