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Exclusive Measurement of DVCS off ^4He at 6 GeV and proposal for the 12 GeV

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Inclusive deep inelastic scattering experiments have been instrumental in advancing our understanding of the Quantum Chromodynamics (QCD) structure of nuclei and the effect of nuclear matter on the structure of hadrons. A great example is the observation by the European Muon Collaboration (EMC) of a deviation of the deep inelastic structure function of a nucleus from the sum of the structure functions of the free nucleons, the so-called EMC effect. On the theory side, despite decades of theoretical efforts with increased sophistication, a unifying physical picture of the origin of the EMC effect is still a matter of intense debate. To reach the next level of our understanding of nuclear QCD and unravel the partonic structure of nuclei, experiments need to go beyond the inclusive measurements and focus on exclusive and semi-inclusive reactions. In this talk, results of the first exclusive measurement of deeply virtual Compton scattering off ^4He will be presented. Future measurements at Jefferson Lab 12 GeV using a new CLAS12 Low Energy Recoil Tracker (ALERT) will be discussed.

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