

Abstract Submitted
for the DNP12 Meeting of
The American Physical Society

Nucleon structure studies through Timelike Compton Scattering¹

TANJA HORN, Catholic University of America — Hard exclusive processes have emerged as a class of reactions providing novel information on the quark and gluon distributions in hadrons. Factorization theorems allow one to express amplitudes of these processes in terms of Generalized Parton Distributions (GPDs). The measurement of suitable experimental observables and the extraction of GPDs is one of the high priority 12 GeV Jefferson Lab programs. Deeply Virtual Compton Scattering (DVCS) is generally thought of as the cleanest tool for accessing the valence quark GPDs of the nucleon. A new and promising opportunity on the road to constraining GPDs is presented by Timelike Compton scattering (TCS) the inverse process to space-like DVCS. TCS offers straightforward access to the real part of the Compton amplitude. Combining space-like and time-like data thus makes it possible to test the universality of GPDs. The first studies of TCS using real tagged and quasi-real untagged photons were performed at Jefferson Lab 6 GeV. In this talk preliminary results on angular asymmetries and extraction of the real part of Compton form-factors using electroproduction data and a comparison with photoproduction data will be presented. We will also discuss future plans for di-lepton production in the Jefferson Lab 12-GeV era.

¹Work supported in part by NSF grant PHY-1019521.

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Date submitted: 02 Jul 2012

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