Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Nucleon Structure Studies through Time-like Compton Scattering[1] IBRAHIM ALBAYRAK, TANJA HORN, Catholic University of America, PAWEL NADEL-TURONSKI, Jefferson Lab — 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). Deeply Virtual Compton Scattering (DVCS) has been the focus of interest as it provides the cleanest tool for accessing the quark GPDs of the nucleon. Time-like DVCS, also known as Time-like Compton Scattering (TCS), is the inverse process to space-like DVCS that can be probed through the photoproduction of lepton pairs. TCS can be an effective tool for studying 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 we will present preliminary results on angular asymmetries and extraction of the real part of Compton form-factors. We will also discuss future plans for di-lepton production in the Jefferson Lab 12-GeV era.

[1]Supported in part by NSF grant 1019521.

Tanja Horn
Catholic University of America

Date submitted: 28 Jun 2013 Electronic form version 1.4