

Abstract Submitted
for the DNP13 Meeting of
The American Physical Society

Pion Structure from Large to Small Distance Scales¹ MARCO CARMIGNOTTO, TANJA HORN, The Catholic University of America — Meson electroproduction data play an important role in our understanding of hadron structure. The importance of the pion in this has been recognized and has already resulted in many activities to measure the pion's properties and understanding its structure. At large distance scales studies of the transverse pion charge radius could provide information on how QCD describes the interaction and existence of elementary particles. Increasing the virtual photon mass (Q^2) in electron scattering experiments allows one to reach smaller distance scales. In this regime one becomes more and more sensitive to the partonic picture where hard and soft physics have been shown to factorize. In this talk we will discuss the reconstruction of the transverse pion charge radius distribution from measurements of the charged pion form factor. This analysis was carried out based on recent work on the proton, which used a numerical inverse Fourier transform method, taking into account the limited experimental knowledge of the form factor at higher Q^2 and the experimental uncertainties of existing data. We will also discuss opportunities for pion form factor measurements at large Q^2 at 12 *GeV* JLab.

¹Supported in part by NSF grant PHY-1019521.

Marco Carmignotto
The Catholic University of America

Date submitted: 01 Jul 2013

Electronic form version 1.4