



Contribution ID: 1838 Type: **CLOSED - Oral (Student, In Competition) / Orale (Étudiant(e), inscrit à la compétition)**

π^+ Electroproduction at High $-t$

Tuesday, 30 May 2017 14:30 (15 minutes)

Measurements of exclusive meson production are a useful tool in the study of hadronic structure. In particular, one can discern the relevant degrees of freedom at different scales through these studies. In the transition region between low momentum transfer (where description of hadronic degrees of freedom in terms of effective hadronic Lagrangians is valid) and high momentum transfer (where degrees of freedom are quarks and gluons), t -channel exchange of a few Regge trajectories permits an efficient description of the energy dependence and the forward angular distribution of many real- and virtual-photon-induced reactions. In this work, we study the $p(e, e'\pi^+)n$ reaction at fixed Q^2 and W of 2.5 GeV² and 2.0 GeV, respectively, while varying the four momentum transfer to the nucleon $-t$ from 0.2 to 2.1 GeV². As $-t$ is increased, the hadronic interaction scale is reduced independently of the observation scale of the virtual photon, providing valuable information about the hard-scattering process in general. The data was taken at Jefferson Lab Hall C in 2004 using the HMS and SOS magnetic spectrometers, and I will present the preliminary result of the differential cross section analysis in this talk.

(*) Supported by NSERC SAPIN-2016-00031

Primary authors: Mr BASNET, Samip (University of Regina); HUBER, Garth (University of Regina)

Presenter: Mr BASNET, Samip (University of Regina)

Session Classification: T3-5 Hadronic Structure (DNP) | Structure hadronique (DPN)

Track Classification: Nuclear Physics / Physique nucléaire (DNP-DPN)