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## Measurement of Charged Pion Form Factor at Jefferson Lab

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One of the most challenging goals in modern physics is to understand hadronic structure, as properties of constituent quarks and gluons (e.g. spin, mass) do not explicitly add up to the properties of hadrons. The pion  $(\pi$ -meson) is the lightest quark system and its properties are deeply linked to the understanding of how quarks are confined in hadronic matter. The pion form factor  $(F_{\pi})$  is an important observable and can be measured by studying the exclusive pion electro-production reaction  $p(e, e'\pi^+)n$ . The Pion-LT experiment was performed to measure the  $F_{\pi}$  at high  $Q^2$  over a wide kinematic range at the Thomas Jefferson National Accelerator Facility (JLab) located in Newport News, Virginia, USA. This experiment seeks to measure longitudinal cross-section  $(\sigma_L)$  and transverse cross-section  $(\sigma_T)$  using the unique Rosenbluth LT-separation technique, in order to extract  $F_{\pi}$  precisely. In this talk, I will discuss the current status of Pion form factor measurements and the Rosenbluth LT-separation technique performed at Jefferson Lab on behalf of the PionLT collaboration.

## Keyword-1

Hadronic Structure

## Keyword-2

QCD

## Keyword-3

Jefferson Lab

Author: Mr JUNAID, Muhammad (University of Regina)

Presenter: Mr JUNAID, Muhammad (University of Regina)

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