Photoproduction of the π^0 meson from 3.6 - 5.5 GeV

Michael C. Kunkel*
Forschungszentrum Jülich

(CLAS Collaboration)
(Dated: October 12, 2015)

Exclusive neutral pion photoproduction ($\gamma p \rightarrow p\pi^0$) was measured in the CLAS detector at the Thomas Jefferson National Facility. The experiment employed a 1.1-5.5 GeV bremsstrahlung photon beam from 5.6 GeV electron beam created in the Continuous Electron Beam Accelerator Facility (CEBAF). The photon beam energy was impinged on a liquid hydrogen target. The neutral pions were detected via external conversion, $\pi^0 \rightarrow \gamma\gamma \rightarrow e^+e^-\gamma$, and subsequent Dalitz decay, $\pi^0 \rightarrow \gamma^*\gamma \rightarrow e^+e^-\gamma$. Measured differential cross-sections, $\frac{d\sigma}{dt}$ and $\frac{d\sigma}{d\cos\theta}$ are compared with Regge and handbag theoretical calculations.

PACS numbers:

I. INTRODUCTION

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II. INTRODUCTION

Write the experiment here

III. PARTICLE IDENTIFICATION

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IV. EVENT SELECTION

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V. MONTE-CARLO

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VI. SYSTEMATIC UNCERTAINTIES

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VII. NORMALIZATION

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VIII. CROSS-SECTIONS

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IX. COMPARISON WITH THEORETICAL MODELS

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* Also at Physics Department, XYZ University.