

Abstract Submitted
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Polarization Measurements of the Recoil Proton in π^0 Photoproduction¹ WEI LUO, Lanzhou University and Jefferson Lab, MARK JONES, Jefferson Lab, LUBOMIR PENTCHEV, College of William and Mary, THE JEFFERSON LAB HALL C GEP-III COLLABORATION, THE JEFFERSON LAB RCS COLLABORATION — Perturbative QCD theory predicts that the polarization components above the baryon resonance region should have a smooth dependence of E_γ and approaching limits established by hadron helicity conservation in absence of baryon resonance. Published data show strong variation of polarization variables above 2 GeV which could be a sign of high-mass resonance. We present preliminary results of π^0 photoproduction in $p(\vec{\gamma}, \vec{p})\pi^0$ reaction from the Jefferson Lab Hall C experiments E04-108, E04-019, E07-002 and Hall A experiment E99-114 which all measured the polarization observables of proton using recoil polarization method with high statistics. Our data extends the polarization measurement of π^0 photoproduction up to $E_\gamma = 5.7$ GeV with high four momentum transfer. The results show good agreement in the overlap region with previous experiment in Hall A that E_γ up to 4.1 GeV. We will discuss the interpretation of these observations.

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