Abstract Submitted
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Separated Response Function Ratios in Forward Pion Electroproduction CORNEL BUTUCEANU, University of Regina, FPI COLLABORATION[1] — The first complete separation of the four unpolarized electromagnetic response functions above the dominant resonances has been made for forward, exclusive $\pi^{\pm}$ electroproduction on the nucleon. Measurements were made above the resonance region at fixed invariant mass $W = 1.95$ GeV in the $Q^2 = 0.6 - 1.6$ (GeV/c)^2 range. The separated ratio $R_L = \sigma_L^{\pi^-}/\sigma_L^{\pi^+}$ is sensitive to any small isoscalar contamination to the dominant isovector pion exchange amplitude which is the basis for the determination of the charged pion form factor, $F_\pi(Q^2)$ from electroproduction data. A favorable value of this ratio may also have implications for constraining polarized GPD's with ratios of longitudinal observables. At large $-t$, a separated ratio $R_T = \sigma_T^{\pi^-}/\sigma_T^{\pi^+} \simeq 1/4$ would suggest a transition between pion knockout and quark knockout mechanisms. Preliminary results on the separate ratios R_L and R_T and their evolution with $-t$ will be presented and discussed.

[1]Pion Form Factor Collaboration at TJNAF

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