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Reaction Mechanism for Forward Pion Electroproduction from π^-/π^+ ratios on the Deuteron KETEVI ASSAMAGAN, *Hampton University*[1] — for the Charged Pion Form Factor (F_π) Collaboration at the Thomas Jefferson National Accelerator Facility (E93-021). During the F_π experiment, forward pion electroproduction data were acquired on the deuteron for Q^2 = 0.6-1.6 at W = 1.95 for both π^+ and π^-. Measurements were made in Hall C with two beam energies at fixed momentum transfer in order to separate the longitudinal and transverse response functions. The ratio of π^-/π^+ production on the deuteron yields an important test of the reaction mechanism, and most systematic errors cancel in this ratio. Previous results using unseparated cross sections were consistent with pion pole dominance at low $-t$ and s-channel quark knockout at higher $-t$. Ratios for the separated response functions should make more definitive conclusions possible. The F_π experiment will extract $F_\pi(Q^2)$ from the pion-pole dominated longitudinal response. Reaction mechanism studies will help us to understand any longitudinal non-pole physics backgrounds which may become important at larger $-t$. The state of the analysis will be summarized as well as our improving knowledge of the reaction mechanism.

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