

Abstract Submitted  
for the HAW05 Meeting of  
The American Physical Society

**New Measurements of the Low  $Q^2$  Behavior of the  $\gamma^*p \rightarrow \Delta$  Reaction** SEAN STAVE, MIT — Data were taken using a polarized electron beam at the Mainz Microtron for the  $p(\vec{e}, e'p)\pi^0$  reaction in the  $\Delta$  region at  $Q^2 = 0.06 \text{ GeV}^2$  utilizing out of plane magnetic spectrometers. Results for the EMR = E2/M1 and CMR = C2/M1 ratios and the magnitude of the M1 amplitude will be shown and compared with reaction models. Non-zero quadrupole amplitudes demonstrate non-spherical components in nucleon and  $\Delta$  structure. The data test the dynamical model descriptions of the  $Q^2$  evolution in the long range, low  $Q^2$  region where the pion cloud is predicted to be primarily responsible for non-spherical structure components. The EMR and CMR are extracted using resonant multipole fits of the separated cross sections  $\sigma_0 \equiv \sigma_T + \epsilon\sigma_L, \sigma_{TL}, \sigma_{TT}$ . Background multipoles are tested through measurement of the fifth structure function  $\sigma_{TL'}$ . The experiment was performed by an Athens, Mainz A1, and MIT collaboration.

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Date submitted: 24 May 2005

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