Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

N-Δ transition form factors[1] MANDAR BHAGWAT, Argonne National Laboratory — Nucleon and Δ amplitudes have been obtained by solving a Poincaré-covariant Faddeev equation, which describes baryons as composites of confined-quarks and confined-nonpointlike-diquarks. The amplitudes were used to calculate the nucleon form factors. The calculation predicts a ratio $\mu_p G_E^p / G_M^p$ that agrees with extracted JLab data and also predicts that this ratio will pass through zero at $Q^2 = 6.5 \text{GeV}^2$. This prediction will be tested in forthcoming JLab experiments. We have extended the framework to study the electromagnetic N-Δ transition form factors. Results for the ratios $G_E(p^2)/G_M(p^2)$ and $G_C(p^2)/G_M(p^2)$ are compared with observations. Effects of pion loops, which in dynamical coupled-channel models contribute substantially to $G_C(p^2)/G_M(p^2)$ at low Q^2, are also considered.

Mandar Bhagwat
Argonne National Laboratory

Date submitted: 28 Jun 2006

Electronic form version 1.4