

Abstract Submitted
for the DNP07 Meeting of
The American Physical Society

New Measurement of Elastic *ed* Scattering BYUNGWUEK LEE, SEONHO CHOI, Seoul National University, DOUGLAS HIGINBOTHAM, Jefferson Lab, RONALD GILMAN, Rutgers University, FOR THE JEFFERSON LAB HALL A COLLABORATION — Differences between previous measurements of low momentum transfer electron-deuteron elastic scattering prevent a clean determination of even the sign of the leading low momentum transfer relativistic corrections, or of the convergence of chiral perturbation theory. We have attempted to resolve this issue with new high-precision measurements in Jefferson Lab Hall A, with $<1\%$ statistical and $2 - 3\%$ systematic uncertainties. Elastic electron scattering was measured on targets of tantalum, carbon, hydrogen, and deuterium at beam energies of 362 and 687 MeV. The additional targets provide both kinematic calibration information, and tests of the precision of determining cross sections in better measured reactions. The four-momentum transfer covered the range $0.01 - 0.5 \text{ GeV}^2$. The experiment included a new beam calorimeter, to better calibrate the low currents used in the experiment, and new collimators to better define the spectrometer solid angles. We will present preliminary results, including the deuteron $A(Q)$ structure function.

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Date submitted: 02 Jul 2007

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