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Development of GEM Detectors for OLYMPUS and Analysis of Experimental BLAST Data[1] MATTHEW ANTHONY, University of Notre Dame, LAURA HAVENER, University of North Carolina — OLYMPUS is a precision experiment that investigates the two-photon contribution to elastic lepton scattering. It is based on the existing BLAST detector to precisely determine the trajectories of charged particles. This apparatus does not cover the forward angle regions where elastic scattering will be used to monitor the luminosities. Therefore, precise tracking detectors will be placed in these positions. GEM (Gas Electron Multiplier) detectors incorporate Cu layer-sandwiched Kapton foils with a chemically etched micro-hole pattern for gas amplification. A test chamber for GEM detectors was produced to test performance of GEM foils and the readout. A ROOT data analysis project was carried out in preparation for a publication of BLAST experimental data. Graphs were produced for the new measurements of the deuteron tensor analyzing powers T20 and T21 and the separated charge (Gc) and quadrupole (Gq) form factors as a function of four-momentum transfer in comparison with existing data and various theoretical descriptions.

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