

Abstract Submitted  
for the APR11 Meeting of  
The American Physical Society

**Measuring two-photon exchange in elastic electron-proton scattering with OLYMPUS** AXEL SCHMIDT, MIT, OLYMPUS COLLABORATION — Polarization-transfer measurements of the ratio of the proton's electric and magnetic form factors disagree substantially at large momentum-transfers from ratios obtained through unpolarized experiments. This discrepancy may be resolved by additional contributions to the elastic cross-section beyond the single-photon Born Approximation. The OLYMPUS experiment will test this hypothesis by measuring the two-photon contribution to elastic scattering. This contribution will be detected by measuring the ratio of cross-sections for electron-proton to positron-proton elastic scattering in the  $Q^2$  range 0.5–2.5 GeV/c<sup>2</sup> at DESY, in Hamburg, Germany. Installation of the OLYMPUS experiment in the DORIS storage ring is under way in anticipation of dedicated running in the spring of 2012. A description of the experiment as well as a status report will be presented.

Axel Schmidt  
MIT

Date submitted: 07 Jan 2011

Electronic form version 1.4