

## **Probing two-photon exchange with OLYMPUS**

M. Kohl<sup>1</sup> for the OLYMPUS collaboration

<sup>1</sup> *Physics Department, Hampton University, Hampton, VA 23668, USA*

Contact email: *kohlm@jlab.org*

Two-photon exchange is believed to be responsible for the discrepancies in the proton electric to magnetic form factor ratio found with the Rosenbluth and polarization transfer methods. If this explanation is correct, one expects significant differences in the lepton-proton cross sections between positrons and electrons. The OLYMPUS experiment at DESY in Hamburg, Germany was designed to measure the ratio of unpolarized positron-proton and electron-proton elastic scattering cross sections over a wide kinematic range with high precision, in order to quantify the effect of two-photon exchange. The experiment used intense beams of electrons and positrons stored in the DORIS ring at 2.0 GeV interacting with an internal windowless hydrogen gas target. The current status of OLYMPUS will be discussed.



Figure 1: *The OLYMPUS setup shortly before the installation into the DORIS ring in July 2011.*