

**Symmetric Møller/Bhabha luminosity monitor for the OLYMPUS experiment** — ●ROBERTO PEREZ BENITO — Johannes Gutenberg Universität Mainz

Recent determinations of the proton electric to magnetic form factor ratio indicate an unexpected discrepancy between the ratio obtained using polarisation transfer measurements and the ratio from the Rosenbluth separation technique in unpolarised cross section measurements. This discrepancy has been explained theoretically as the effect of two-photon exchange.

The *OLYMPUS* experiment at DESY proposed to measure the ratio of positron-proton and electron-proton elastic scattering cross sections. The experiment utilised beams of electrons and positrons in the DORIS ring at 2.0 GeV incident on an unpolarized internal hydrogen gas target and the BLAST detector from the MIT-Bates Linear Accelerator Center with modest upgrades.

In order to reduce the systematic error from the determination of luminosity, redundant measurements of the relative luminosity were necessary. The symmetric Møller/Bhabha luminosity monitor built at the University of Mainz consisted of two symmetric arrays of lead fluoride ( $PbF_2$ ) crystals. Results on the performance of the symmetric Møller/Bhabha luminosity monitor will be presented in this contribution.

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