

# Luminosity measurement in OLYMPUS experiment

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The OLYMPUS experiment aims to determine the contribution from the two photon exchange mechanism by measuring the ratio of differential cross sections for elastic electron proton and positron proton scatterings. The expected effect (beam charge asymmetry) is small being on the level of a few per cent which requires a thorough measurement of the luminosity at each primary beam species. Three independent systems are used to monitor the luminosity: a) the beam current and target gas density are monitored to provide on-line slow control information; b) the system of multi wire proportional chambers, GEM detectors and scintillation counters detects leptons scattered elastically at 12 deg in coincidence with recoil protons; c) The symmetric Møller/Bhabha calorimeter measures the coincidence rate of lepton-lepton scattering events at symmetric angles. Analysis of performance of the OLYMPUS monitoring systems is presented in this talk.