

DESY Seminar

5 October 2004, 17:00, DESY Hörsaal

K. Eggert (CERN)

The TOTEM experiment at the LHC: Total cross-section, elastic scattering and diffraction

Using the optical theorem, TOTEM will determine, luminosity independent, the total pp cross-section with a precision of about 1%. Elastically scattered protons will be measured over a t interval (t : momentum transfer squared) of 10^{-3} to 10 GeV^2 . Two charged particle detectors integrated on both sides into the forward regions of the CMS detector will provide the total inelastic rate. Elastically scattered protons are detected with edgeless Silicon detectors embedded in Roman pots a few hundred meters upstream.

The two experiments, CMS and TOTEM, will cover almost the complete rapidity range. Furthermore, diffractive protons are detected on both sides and their momentum loss can be determined with a precision of 10^{-3} . This will allow an extensive study of diffractive dissociation, including hard diffraction and double Pomeron exchange.

- Tea and cookies will be served at 16:45 in the lobby.
- After the seminar there is a chance for private discussions with the speaker over wine and pretzels also in the lobby.