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Status and prospects from TOTEM

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Totem is exploring the forward region at
pseudorapidity larger than 3.1; its main goal is the measurement of the
total and elastic cross-section at 14 TeV and the study of diffractive
physics in the forward region.

The experiment is now built and almost
completely commissioned; data taking started in December 2009.

TOTEM aims at measuring the total cross section beyond 1 TeV/c with the
unprecedented precision of 1 % by using the luminosity independent method,
based on the simultaneous detection of elastic scattering at low
momentum transfer and of the inelastic interactions. To achieve this,
protons scattered at very small angles in elastic or quasi-elastic
reactions will be measured in telescopes of silicon detectors enclosed
in Roman Pots, placed on both sides of the intersection regions;
inelastically produced secondaries will be measured by a forward
inelastic detector covering the region 3 < eta <7 with full azimutal
acceptance.

The TOTEM physics program includes the measurement of forward
charged multiplicity distributions at the TEV scale, important for the
understanding of the cosmic ray events. TOTEM will take data under all
LHC beam conditions including standard high luminosity runs to maximize
its physics goals.

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Session Classification: Recent relevant accelerator data and results

Track Classification: Accelerator data