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First Data from the TOTEM experiment at LHC

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Totem is the only LHC experiment that will explore the forward region at pseudorapidity larger than 3.1. The 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 approved and funded in the 2006, was build, largely commissioned and started his data taking in December 2009. The total cross section beyond 1 TeV/c will be measured with the unprecedented precision of 1% using the luminosity independent method based on the simultaneous detection of elastic scattering at low momentum transfer and of the inelastic interactions. 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 azimuthal acceptance. This last detector will measure the overall rate of inelastic reactions. The TOTEM physics program also include for the first time the measurement of the charged multiplicity 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. This contribution describes the status of the TOTEM experiment. A first set of data at 0.9 and 2.36 TeV was recently collected and some preliminary results will be shown. In addition we will discuss the measurements to be made in the 2010 LHC runs.

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