



Contribution ID: 134

Type: **Oral presentation**

## **Elastic and Diffractive Proton-Proton Scattering Measurements by TOTEM at the LHC**

*Tuesday, 29 April 2014 14:30 (30 minutes)*

The TOTEM experiment at the LHC has measured the elastic proton-proton cross-section at  $\sqrt{s} = 7$  TeV and 8 TeV in a large range of the four-momentum transfer  $t$ . At 8 TeV the measurement reaches into the Coulomb-Nuclear Interference region, providing insight into the nuclear scattering phase and its functional dependence on  $t$ .

Via the optical theorem, the measurement of low- $|t|$  elastic scattering has enabled the determination of the total  $p$ - $p$  cross-section with different, systematically complementary approaches.

TOTEM has also performed measurements of diffractive processes, either with leading protons (Single and Central Diffraction) or purely based on the forward trackers T1 and T2 (Double Diffraction).

**Primary author:** Dr DEILE, Mario (CERN)

**Presenter:** Dr DEILE, Mario (CERN)

**Session Classification:** WG2: Small- $x$ , Diffraction and Vector Mesons

**Track Classification:** WG2: Small- $x$ , Diffraction and Vector Mesons