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Pseudorapidity distributions of charged particles in proton-proton collisions by the CMS and TOTEM experiments

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The pseudorapidity distributions of charged particles produced in proton-proton collisions at a centre-of-mass energy of 8 TeV are measured in the ranges |eta| < 2.2 and 5.3 < |eta| < 6.4, by the CMS and TOTEM detectors, respectively. The measurement is performed with a one-side TOTEM trigger, which is sensitive to 99% of non-diffractive interactions and all diffractive interactions with masses above 3.6 GeV, for three different event selections: an inclusive sample with the least selection bias, a sample enhanced in non-single diffractive events, and a sample enhanced in singlediffractive events. The data are compared to models used to describe high-energy hadronic interactions which are found not to consistently describe the measured distributions.

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