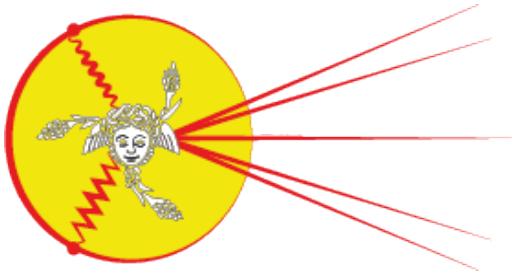

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Exclusive central pi^+pi^- production in proton-proton collisions at ps = 7 TeV

Tuesday, 6 September 2016 12:10 (20 minutes)

We report a measurement of the exclusive production of pairs of charged pions in proton-proton collisions, dominated by the process pp->p(*)pi^+pi^-p(*), where p(*) *stands for a diffractively dissociated proton, the p+p- pair is emitted at central rapidities y, and the incident protons stay intact or dissociate without detection p(*).
The measurement is performed with the CMS detector at the LHC, using a data sample corresponding to an integrated luminosity of 450 ub^-1 collected at a center-of-mass energy of 7 TeV in 2010. The cross section measured in the phase space defined by pion transverse momentum pT > 0.2 GeV/c and rapidity jyj < 2 is found to be 20.5 +/- 0.3 (stat) +/. 3.1 (syst) 0.8 (lumi) ub. The differential cross sections for pi+pi- pairs as a function of the pion pair invariant mass, pT, and y, as well as a single-pion differential cross section as a function of pion pT are also measured and compared to several phenomenological predictions.

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