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Measurement of the energy density as a function of pseudorapidity in proton–proton collisions at √s=13TeV (Article) (Open Access)

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Abstract

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A measurement of the energy density in proton–proton collisions at a centre-of-mass energy of s=13TeV is presented. The data have been recorded with the CMS experiment at the LHC during low luminosity operations in 2015. The energy density is studied as a function of pseudorapidity in the ranges -6.6<η<-5.2 and 3.15 < | η| < 5.20. The results are compared with the predictions of several models. All the models considered suggest a different shape of the pseudorapidity dependence compared to that observed in the data. A comparison with LHC proton–proton collision data at s=0.9 and 7TeV confirms the compatibility of the data with the hypothesis of limiting fragmentation. © 2019, CERN for the benefit of the CMS collaboration.

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