Article No. 8

Measurement of the average very forward energy as a function of the track multiplicity at central pseudorapidities in proton-proton collisions at $\sqrt{s}$ = 13 TeV.

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Abstract

The average total energy as well as its hadronic and electromagnetic components are measured with the CMS detector at pseudorapidities -6.6 < η < -5.2 in proton-proton collisions at a centre-of-mass energy $\sqrt{s}$ = 13 TeV. The results are presented as a function of the charged particle multiplicity in the region $|\eta| < 2$. This measurement is sensitive to correlations induced by the underlying event structure over a very wide pseudorapidity region. The predictions of Monte Carlo event generators commonly used in collider experiments and ultra-high energy cosmic ray physics are compared to the data. All generators considered overestimate the fraction of energy going into hadrons.