

Measurement of $dN/d\eta$ and $dET/d\eta$ in PbPb collisions at $\sqrt{s}=2.76\text{TeV}$ with CMS

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Measurements of the charged hadron multiplicity and transverse energy are presented for minimum bias PbPb collisions at a center-of-mass energy of 2.76 TeV per nucleon pair. The number of charged hadrons was obtained by two different methods based on the inner silicon pixel system of the CMS detector at the LHC. One technique involved counting the number of reconstructed single particle hits in the pixel detector, while the other formed hit pairs from the different detector layers. The two methods are in excellent agreement. For the transverse energy measurement, CMS has almost hermetic calorimetry with fine granularity and excellent resolution allowing to measure the energy over nearly the complete angular range. The measurements are performed as a function of pseudorapidity and centrality. The results are compared with heavy-ion results from earlier experiments, where a smooth dependence on the collision energy is observed. The centrality dependence of transverse energy production becomes steadily weaker as the pseudo-rapidity increases from 0 to 5.

Summary

This work exploits the very large acceptance of CMS to measure the flow of energy and entropy over a very wide phase space.

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