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Charged-particle production in pp collisions at 13.6 TeV and Pb-Pb collisions at 5.36 TeV with ALICE

The pseudorapidity dependence of charged particle production provides information on the partonic structure of the colliding hadrons. It is especially interesting at LHC energies, as this observable is sensitive to the non-linear QCD evolution of the initial state. For the Run 3 of LHC, ALICE has upgraded its detectors, increasing its pseudorapidity coverage and tracking of charged particles over a wider range of pseudorapidity ($-3.6 < \eta < 2$) by combining the information from the upgraded Inner Tracking System (ITS) and the newly installed Muon Forward Tracker (MFT). These new detectors enable the exploration of particle production mechanisms by addressing the charged-particle pseudorapidity densities, measured over a wide η range, in pp and Pb–Pb collisions. This contribution presents new results from Run 3 on charged-particle multiplicity, allowing us to investigate the evolution of particle production with energy and system size. The measurement will be compared with models based on various particle-production mechanisms and different initial conditions at mid and forward rapidities.

Secondary track

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