

# Model study of charged particle production in Pb–Pb collisions at $\sqrt{s_{NN}} = 5.36$ TeV

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In this study, we present the model study of the charged-particle multiplicity density,  $dN_{ch}/d\eta$  in Pb-Pb collisions at a centre-of-mass energy per nucleon-nucleon pair of  $\sqrt{s_{NN}} = 5.36$  TeV. The centre-of-mass energy for Pb-Pb collisions is the highest ever that is planned to be collected by LHC at the end of 2022 for the first time. The multiplicity of charged particles produced in the collisions is a key observable to characterise the properties of the matter created in these collisions, as the overall particle production is related to the initial energy density. Before the new frontier data collection, we prepared the model and theoretical calculations in different mechanisms for particle production in nuclear collisions. Model study of charged particle production in Pb–Pb collisions at the LHC with the ALICE detector.

## Theory / experiment

Experiment

## Group or collaboration name

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