

Data-driven particle composition correction of tracking efficiency for charged particles with ALICE

The ALICE experiment at the LHC is designed to investigate the properties of the Quark-Gluon Plasma by studying high energy pp, p-Pb and Pb-Pb collisions. The parton energy loss in the medium can be examined by measuring the production of charged particles and their nuclear modification factor at high transverse momentum. In ALICE, charged particles are measured with the Time Projection Chamber. An accurate estimate of the tracking efficiency is a key ingredient for such measurements.

In this poster, we show how tracking efficiencies are obtained based on Monte Carlo simulations with PYTHIA and HIJING event generators for particle production and GEANT to simulate the detector response. In particular, we focus on the data-driven procedure being performed to re-weight the tracking efficiencies of identified particle that account for the different abundances of the various particle species in Monte-Carlo and data.

We present results on the tracking efficiency obtained from this data-driven procedure for the measurement of charged particles, especially in pp and Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV.

Preferred Track

Jets and High pT Hadrons

Collaboration

ALICE

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