



Contribution ID: 334

Type: Poster

Measurements of long-range two-particle correlation over a wide pseudorapidity range in p–Pb collisions at 5.02 TeV

Tuesday 5 September 2023 17:30 (2h 10m)

Measurements of long-range angular correlations are one of the important tools to evaluate the interplay between the initial- and final-state effects in small collision systems in view of understanding the evidence of collectivity.

The charged-particle multiplicity distribution as a function of pseudorapidity (η) is asymmetric in p–Pb collisions. Since the mean free path depends on multiplicity, the $v_n(\eta)$ reflects the dynamics of collectivity in p–Pb collisions. The measurement of $v_n(\eta)$ in p–Pb collisions is an important study of how charged-particle multiplicity and anisotropic flow relate to the longitudinal evolution of the system. In this poster, we present new final results of $v_2(\eta)$ extracted from long-range two-particle azimuthal correlations in p–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV measured with ALICE. These measurements utilize the Forward Multiplicity Detector, which allows for unprecedented pseudorapidity ranges to be explored (up to $\Delta\eta \sim 8$) and allow to measure the η dependence of v_2 over a wide pseudorapidity range ($-3.1 < \eta < 4.8$). Results are compared with the AMPT and hydrodynamical calculations.

Category

Experiment

Collaboration (if applicable)

ALICE collaboration

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