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Angular correlations of heavy-flavour hadron decay electrons with charged particles in p-Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV with the ALICE Detector

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Angular correlations of heavy-flavour hadron decay electrons with charged particles in p-Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV with the ALICE Detector

Henrique Zanoli on behalf of the ALICE Collaboration

Two-particle correlations in azimuth and pseudorapidity are used to explore the properties of the hot and dense medium created in heavy ion collisions by studying collective effects and jet quenching. The study of correlations in small systems (pp and p-Pb collisions) is relevant as a baseline for Pb-Pb collisions and to understand jet properties, as well as possible cold nuclear matter effects in the presence of the nucleus and collective behaviour in small systems. A double-ridge structure has been observed in these small systems for light-flavor particles, but the physical meaning of this structure is still in debate, in particular regarding the role of hydrodynamics and initial conditions in such systems. Extending these measurements to the heavy-flavour sector is therefore crucial to improve the current understanding of the small systems.

Heavy quarks (charm and beauty) are dominantly produced in the initial hard scatterings of the collision due to their large masses. In case a medium is formed they experience its full evolution. In this work the heavy quarks are studied by measuring electrons coming from the semi-leptonic decays of hadrons that contain a heavy quark.

In this poster, we will present current status of the angular correlations of heavy-flavour hadron decay electrons with charged particles in p-Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV in the ALICE central barrel acceptance ($|\eta| < 0.8$) using the Run 2 dataset. This dataset offers increased statistics when compared to Run 1 allowing us to improve the performance of this measurement.

List of tracks

Heavy-flavour (open and hidden)

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