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Multiplicity dependent production of heavy-flavour decay electrons in p-Pb collisions with ALICE

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Heavy quarks (charm and beauty), produced in the initial stages of hadronic collisions in hard scattering processes, provide an important testing ground for perturbative QCD calculations. Measurements of their production as a function of the charged-particle multiplicity in pp and p-Pb collisions have recently gained interest for investigating the interplay between hard and soft mechanisms of particle production. In the p-Pb collision system, the formation and the kinematic properties of heavy-flavour hadrons can be influenced at all stages by Cold Nuclear Matter (CNM) effects and by concurrent Multiple Parton Interactions (MPI).

In recent studies, a faster than linear increase of the self-normalised yield of electrons from heavy-flavour hadrons as a function of charged-particle multiplicity up to 8 GeV/c has been observed in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV. Such trend can arise from the interplay between MPI and multiple binary nucleon-nucleon collisions. To further explore the non linear rise, we extend these measurements to higher p_T where the contribution of electrons from beauty-hadron decays is expected to dominate.

In this contribution, we will present the measurement of the self-normalised yield of electrons from heavy-flavour hadron decay as a function of the self-normalised charged-particle multiplicity estimated at mid-rapidity $|\eta| < 1$ in p-Pb collisions at $\sqrt{s_{NN}} = 8.16$ TeV.

Content type

Experiment

Collaboration

ALICE

Centralised submission by Collaboration

Presenter name already specified

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