

Strangeness in Quark Matter 2019



Contribution ID: 65

Type: Poster

Measurement of open heavy-flavour hadron decay muons as a function of charged-particle multiplicity in pp and p—Pb collisions with ALICE

Tuesday 11 June 2019 18:45 (2 hours)

Heavy quarks (charm and beauty) are produced in the early stages of hadronic collisions via hard scattering processes and therefore are efficient probes to study the properties of the Quark-Gluon Plasma produced in heavy-ion collisions at the LHC. Charged-particle multiplicity gives information on the global characteristics of the event and can be exploited to investigate the possible influence of the event hadronic activity on particle production. Heavy-quark production in pp and p—Pb collisions can have a substantial contribution from Multi-Parton Interactions (MPI), in which several interactions at the partonic level occur in a single collision. This implies a correlation between the particle production and the charged-particle multiplicity. This effect can be explored by studying the correlations between heavy-flavour production and the charged-particle multiplicity. Furthermore, the study of the multiplicity dependence of heavy-flavour production in p—Pb collisions might provide important information regarding Cold Nuclear Matter (CNM).

In this poster, we will present results of the production of heavy-flavour hadron decay muons as a function of charged-particle multiplicity in pp collisions at $\sqrt{s} = 8$ TeV and in p—Pb collisions at $\sqrt{s_{NN}} = 8.16$ TeV at both forward and backward rapidities. The results will be compared with theoretical predictions.

Collaboration name

ALICE

Track

Heavy Flavour

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Session Classification: Poster session with "aperitivo"