

Measurement of electrons from heavy-flavour hadron decays as a function of centrality in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV

The measurement of hadrons containing heavy quarks produced in heavy-ion collisions is a very effective tool to study the Quark Gluon Plasma (QGP). Heavy quarks are produced in the very early stages of the collisions via hard scattering processes, they probe the whole medium evolution and lose energy via elastic and radiative processes. However, in order to obtain information regarding the QGP properties from AA collisions, reference measurements from pp and p-Pb collisions are crucial in order to isolate the effects of the medium on the observables from other effects. In particular, the study of p-Pb collisions can bring important information regarding initial-state effects in Cold Nuclear Matter (CNM), such as the modification of the Parton Distribution Functions (PDFs) of the nuclei or Cronin-like enhancement. The nuclear modification factor (R_{pPb}) and its centrality dependence (Q_{pPb}) are the most effective observables that allow the study of CNM effects.

In this contribution, the p_T differential invariant cross section of electrons from heavy-flavour hadron decays produced in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV are presented both for minimum bias collisions and for different collision-centrality classes. The measurements were performed in the mid-rapidity region ($-1.065 < y_{CMS} < 0.135$ in the center-of-mass of the nucleon-nucleon system). In order to minimize the systematic uncertainties, the ratio between the spectra in the highest centrality classes and the peripheral one (Q_{cp}) was also obtained. Q_{pPb} and Q_{cp} were measured within the p_T interval $2 < p_T < 16$ GeV/c and the centrality ranges were chosen as 0-20%, 20-40%, 40-60% and 60-100%.

Summary

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