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D^{*+} -meson production in p–Pb collisions in ALICE

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Heavy quarks (charm and beauty) are effective probes to investigate the properties of the Quark-Gluon Plasma created in high-energy heavy-ion collisions at the LHC. They are primarily produced in hard scattering processes in the early stage of the collision, after which they experience the full evolution of the system. Previous measurements have shown that the production of prompt D mesons in central Pb–Pb collisions is strongly suppressed in comparison to binary-scaled pp collisions. This suppression may be interpreted as an energy loss of the heavy quarks in the hot and dense medium due to collisional and radiative processes. To obtain a more complete picture on the Pb–Pb results, an understanding of cold nuclear matter effects in the initial and final state such as modification of parton densities in nuclei, k_T broadening and energy loss in cold nuclear matter, is required. These effects are accessible in p–Pb collisions. Here, the measurement of prompt D^{*+} production in p–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with the ALICE detector will be presented.

On behalf of collaboration:

ALICE

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