

Probing the charm hadronisation with ALICE at the LHC

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Charm-quark hadronisation can be investigated by measuring the relative abundance of various particle species, in particular non-strange D mesons (D^0 , D^+ , D^{*+}), D_s^+ mesons, and charm baryons (Λ_c^+ , Σ_c^0). The high precision tracking, good vertexing capabilities and excellent particle identification granted by the ALICE apparatus allows measuring hadrons containing charm quarks over a wide momentum range in pp and pA collisions. Measurements of the charmed-baryon production in small systems are also a fundamental reference for heavy-ion collisions, where an enhancement of the baryon-to-meson ratio could derive from hadronisation via coalescence of charm quarks with the quarks of the Quark-Gluon Plasma formed in these collisions.

In this talk, recent measurements of charmed meson and baryon production in pp collisions and in p-Pb collisions with the ALICE experiment are presented and compared with theoretical calculations. The results include the p_T -differential cross section of Λ_c^+ and Σ_c^0 baryons, and the Λ_c^+/D^0 ratio. The measured values of Λ_c^+/D^0 baryon-to-meson ratio are significantly higher than what expected from model expectations and previous measurements at e^+e^- and e -p colliders.

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