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# Charmed meson and baryon measurements in pp and p-Pb collisions with ALICE at the LHC

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Charm production in proton-proton collisions can be described by perturbative QCD calculations down to low transverse momentum ($p_{\mathrm{T}} \sim 0$), due to the large mass of the charm quark ($m_c >> \Lambda_{QCD}$). The measurement of charm production is thus important to constrain theoretical predictions. In p-Pb collisions, the study of charm production can help disentangle cold nuclear matter effects from the modification of the $p_{\mathrm{T}}$ spectrum of charm in Pb-Pb collisions due to the high-temperature and high energy-density medium formed.

Hadronisation is a non-perturbative process, and as such experimental input is crucial to guide theoretical models. The charmed baryon-to-meson ratio ( $^{+}_{c}/\mathrm{D}^{0}$) is sensitive to hadronisation mechanisms in pp and p-Pb collisions. Furthermore the measurement of heavier charmed baryons such as $^{0}_{c}$ will help to quantify the hadronisation of c quarks to different hadron species. Measurements of charmed baryon production in pp and p-Pb collisions also provide a baseline for future measurements of charmed baryons in Pb-Pb collisions, where the baryon-to-meson ratios will offer a unique probe of thermalisation and hadronisation mechanisms, in particular constraining the role of coalescence and predicted presence of diquark states in the medium.

We present here recent open heavy-flavour results in pp and p-Pb collisions from the ALICE experiment. These include measurements of the D-meson production cross sections, nuclear modification factor in p-Pb collisions, and studies as a function of multiplicity. We also present new results from the ALICE experiment of the $p_{\mathrm{T}}$-differential cross section of the $\Lambda_c^+$ baryon in pp collisions, and in p-Pb collisions - the first heavy-ion measurement of a charmed baryon at the LHC. In addition, the $p_{\mathrm{T}}$-differential cross section times branching ratio of the $^{0}_{c}$ baryon measured in the decay channel $^{0}_{c} \rightarrow \mathrm{e}\ ^{-}\nu_{\mathrm{e}}$ in pp collisions will be presented - the first measurement of $^{0}_{c}$ baryon production at the LHC.

## List of tracks

Heavy-flavour (open and hidden)

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