



SPEAKER: Jaime Norman

TITLE: **Charm baryon production in pp and p-Pb collisions with ALICE**

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ABSTRACT

The measurement of inclusive open heavy-flavour production in pp collisions is an important test of perturbative QCD calculations, and also offers a direct way to study non-perturbative QCD processes. Charmed baryon production measurements, in particular, are useful to address the hadronisation of charm quarks. Measurements in pp and p-Pb collisions also provide a baseline for Pb-Pb collisions, where the baryon-to-meson ratios will offer a unique probe of charm thermalisation and hadronisation mechanisms in the Quark-Gluon Plasma. The production of D_0 , D^+ , D^{*+} and D_s mesons has been measured with ALICE in pp collisions at the LHC at several collision energies, and was found to be compatible with expectations from theory. In this talk, recent measurements of Λ_c^+ and Ξ_c^0 baryon production in pp collisions at a centre-of-mass energy of 7 TeV and Λ_c^+ baryon production in p-Pb collisions at a centre-of-mass energy per nucleon pair of 5.02 TeV will be presented. The reconstruction of charmed baryons at central rapidity via hadronic and semi-leptonic decay channels will be detailed. The production cross sections, charmed baryon-to-meson ratios Λ_c^+/D_0 and Ξ_c^0/D_0 , and the nuclear modification factor R_{pPb} of the Λ_c^+ will be shown and compared to theoretical predictions. The implications for charmed-baryon formation and hadronisation models will be discussed. The measurement of heavy-flavour baryons in Pb-Pb collisions is one of the considerations driving the large upgrade of the ALICE detector for Run 3 and 4, and the perspectives for such measurements will also be outlined.