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Type: **Poster**

Studies of $\Lambda_c^+ \rightarrow pK_S^0$ in p-Pb collisions with the ALICE experiment at the LHC

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The ALICE (*A Large Ion Collider Experiment*) experiment at CERN is mainly aimed to study strongly-interacting matter under extreme conditions of temperature and energy density and, in particular, to verify the QCD predictions about the existence of a phase transition of the hadronic matter to the *Quark-Gluon Plasma* (QGP). Heavy quarks (charm and beauty) are a powerful tool to study the properties of the QGP. Indeed they are formed during the early stages of the collisions via hard scattering of high-energy partons, on a time scale generally shorter than the QGP thermalisation time. So they can traverse the QCD medium, interact with its constituents and experience the whole evolution of the medium.

The $\Lambda_c^+ \Lambda^0$ ratio is sensitive to hadronisation mechanisms and it will offer a unique probe of the role of coalescence and predicted existence of diquark states in the QGP.

Measurements of charmed-baryon production in small system (pp and p-Pb) collisions are a fundamental reference for measurements in Pb-Pb collisions and allow studies of possible modifications of the production due to *cold nuclear matter* effects.

Moreover, the study of charm production as a function of the multiplicity of charged particles produced in the collision can give insight into multi-parton interactions and into the interplay between hard and soft processes.

The recent results for Λ_c^+ baryons reconstructed via their hadronic decay $\Lambda_c^+ \rightarrow pK_S^0$ at mid-rapidity in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV will be presented.

The analysis takes advantage of the high precision tracking, good vertexing capabilities and excellent particle identification offered by the ALICE detector.

Content type

Experiment

Collaboration

ALICE

Centralised submission by Collaboration

Presenter name already specified

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