



Contribution ID: 44

Type: **Poster**

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

Tuesday, 15 May 2018 19:10 (30 minutes)

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  $\Lambda_c^+$  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

**Primary author:** Dr MENINNO, Elisa (Universita e INFN, Salerno (IT))

**Presenter:** Dr MENINNO, Elisa (Universita e INFN, Salerno (IT))

**Session Classification:** Poster Session

**Track Classification:** Open heavy flavour