

# Charmed baryon production with ALICE

Thursday, 10 October 2019 09:55 (15 minutes)

Charm quarks are effective tools to study the properties of the Quark-Gluon Plasma (QGP) formed in heavy-ion collisions at the LHC.

Due to their large mass, they are produced during the early stages of the collisions in hard-scattering processes, on a time interval shorter than the QGP formation time.

Thus, they experience the whole evolution of the system.

The measurement of charmed baryon production in heavy-ion collisions provides unique information on hadronisation mechanisms, constraining the role of coalescence and testing the predicted presence of diquark states in the medium.

Measurements of charmed baryon production in small systems (pp and p-Pb collisions) provide the reference necessary for interpreting results in Pb-Pb collisions.

In addition, in pp collisions, they allow to study the hadronisation of charm quarks, and allow testing QCD calculations.

Measurements in p-Pb collisions are fundamental to disentangle cold nuclear matter effects from those deriving from the presence of the QGP.

ALICE detector is well suited to detect charmed baryons down to low transverse momentum ( $p_T$ ), thanks to the excellent tracking capabilities and state-of-art particle identification.

In this contribution, the latest ALICE results on charmed baryon production in Pb-Pb collisions will be shown. The measurement of the  $\Lambda_c$  production, nuclear modification factor and the  $\Lambda_c/D^0$  ratio in central and semi-central events in a large  $p_T$  interval will be discussed together with the comparison with the results in pp and p-Pb collisions and theoretical models.

In addition, the measurement of the  $\Xi_c$  baryon in pp and p-Pb collisions will be presented.

## Abstract Type

Talk

**Primary author:** 蒋, 秀秀 (C)

**Presenter:** 蒋, 秀秀 (C)

**Session Classification:** S3: 中高能核物理

**Track Classification:** 中高能核物理