

# Measurement of $\Lambda_c^+$ production in pp, p–Pb, and Pb–Pb collisions with the ALICE experiment at the LHC

*Monday, 5 June 2023 15:36 (20 minutes)*

Charm quarks, which are created at the beginning of heavy-ion collisions and interact with the produced quark-gluon plasma (QGP) medium during all the stages of the system evolution, are useful probes of the partonic in-medium energy loss and the quark hadronisation. In particular, the measurement of charmed baryon-to-meson ratio  $\Lambda_c^+/D^0$  is sensitive to the different hadronisation mechanisms and could provide further insights into the possible modification of the hadronisation in heavy-ion collisions, with respect to smaller collision systems.

In this contribution, recent ALICE measurements of the production of  $\Lambda_c^+$  baryons are presented in pp, p–Pb and Pb–Pb collisions. The  $\Lambda_c^+$  production cross section,  $\Lambda_c^+/D^0$  production yield ratio, and the nuclear modification factor  $R_{AA}$  were measured in Pb–Pb collisions at  $\sqrt{s_{NN}} = 5.02\text{TeV}$ . Measurements were also performed in pp collisions down to  $p_T = 0$ , as well as in p–Pb collisions, to investigate the impact of cold nuclear matter effects on the charm production and hadronisation. Comparisons to the model calculations will be presented and the interpretation of these measurements will be discussed.

**Primary author:** BARTELS, Clara

**Presenter:** BARTELS, Clara

**Session Classification:** Hadron decays, production and interaction

**Track Classification:** Hadron decays, production and interactions