



Beitrag ID: 161

Typ: Poster

## Study of charm quark hadronization via $\Lambda_c^+$ and $D_s^+$ production in the CMS experiment

*Dienstag, 28. März 2023 18:30 (2 Stunden)*

Measurements of the lightest open-charm baryon,  $\Lambda_c^+$ , production can provide important information about the quark coalescence process of hadronization in the quark-gluon plasma (QGP). With strange quark yields being enhanced in the presence of the QGP medium, the production of  $D_s^+$  is expected to be enhanced in heavy ion collisions if recombination plays an important role in the hadronization process. The high-luminosity data sets collected by the CMS experiment in 2018 have been used to measure  $\Lambda_c^+$  production via  $\Lambda_c^+ \rightarrow p^+ K^- \pi^+$  in the  $p_T$  range 3–30 GeV /c for pp collisions and 6–40 GeV /c for PbPb collisions in different centrality classes. The  $D_s^+$  production is measured via the decay channel  $D_s^+ \rightarrow \phi \pi^+ \rightarrow K^+ K^- \pi^+$  in the  $p_T$  range 2–40 GeV /c in pp collisions and 6–40 GeV /c in PbPb collisions using the data sets collected by CMS detector in 2015. Results of the differential cross section of  $\Lambda_c^+$  and  $D_s^+$ , the ratios of  $\Lambda_c^+$  and  $D_s^+$  over  $D^0$  yields in pp and PbPb collisions will be presented along with the nuclear modification factors.

### Experiment/Theory

CMS

### Affiliation

CMS

**Primary authors:** CHANDRA, Soumik (PhD Student); STOJANOVIC, Milan

**Vortragende:** CHANDRA, Soumik (PhD Student); STOJANOVIC, Milan

**Sitzung Einordnung:** Poster Session

**Track Klassifizierung:** Heavy flavor and quarkonia