



Contribution ID: 80

Type: Parallel Talk

Constraining hadronization with prompt and non-prompt charm baryons in small collision systems with ALICE at the LHC

Thursday, 7 July 2022 11:45 (15 minutes)

In this contribution, we present the latest measurements of D^0 , D^+ and D_s^+ mesons together with the final measurements of Λ_c^+ , $\Xi_c^{0,+}$, $\Sigma_c^{0,++}$, and the first measurement of Ω_c^0 baryons performed with the ALICE detector at midrapidity in pp collisions at $\sqrt{s} = 5.02$ and $\sqrt{s} = 13$ TeV. Recent measurements of charm-baryon production at midrapidity in small systems show a baryon-to-meson ratio significantly higher than that in e^+e^- collisions, suggesting that the fragmentation of charm is not universal across different collision systems. Thus, measurements of charm-baryon production are crucial to study the charm quark hadronization in a partonic rich environment like the one produced in pp collisions at the LHC energies.

Furthermore, the recent Λ_c^+/D^0 yield ratio, measured down to $p_T = 0$, and the new $\Xi_c^{0,+}/D^0$ yield ratio in p-Pb collisions will be discussed. The measurement of charm baryons in p-nucleus collisions provides important information about possible additional modification of hadronization mechanisms as well as on Cold Nuclear Matter effects and on the possible presence of collective effects that could modify the production of heavy-flavour hadrons.

Finally, the first measurements of charm fragmentation fractions and charm production cross-section at midrapidity per unit of rapidity will be shown for both pp and p-Pb collisions using all measured single charm ground state hadrons.

In-person participation

No

Primary author: ZHU, Jianhui (INFN Padova and Central China Normal University (CCNU))

Presenter: ZHU, Jianhui (INFN Padova and Central China Normal University (CCNU))

Session Classification: Strong interactions and Hadron Physics

Track Classification: Strong interactions and Hadron Physics