

# Quark Matter 2019 - the XXVIIIth International Conference on Ultra-relativistic Nucleus-Nucleus Collisions



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## $D_c^0$ reconstruction via hadronic decay channel in pp collisions at $\sqrt{s} = 13$ TeV

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The high collision energies available at the LHC allow for an abundant production of heavy quarks (charm and beauty), which are sensitive probes for investigating the properties of the Quark-Gluon Plasma (QGP) formed in high-energy heavy-ion collisions. Due to their large masses, they are produced in initial hard parton scattering processes on a timescale shorter than the QGP formation time and experience the whole system evolution. There have been extensive researches regarding the production of charm mesons, such as  $D^0$ ,  $D^+$ ,  $D^{*+}$ ,  $D_s^+$ , in order to investigate the interactions of charm quarks with the QGP constituents and the transport properties of the medium. The measurement of charm-baryon production, and in particular the baryon-to-meson ratios, provides unique information on hadronisation mechanisms, constraining the role of coalescence and testing the predicted presence of diquark states in the QGP.

Measurements of charm-baryon production in pp collisions are important to set up a benchmark for Pb-Pb collisions and provide essential tests of pQCD calculations and models of charm hadronisation process. In this poster, the status and performance of the  $D_c^0$  baryon measurements via the hadronic decay channel  $D_c^0 \rightarrow \pi^+ \pi^-$  (and its charge conjugate) in pp collisions at  $\sqrt{s} = 13$  TeV will be reported.

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