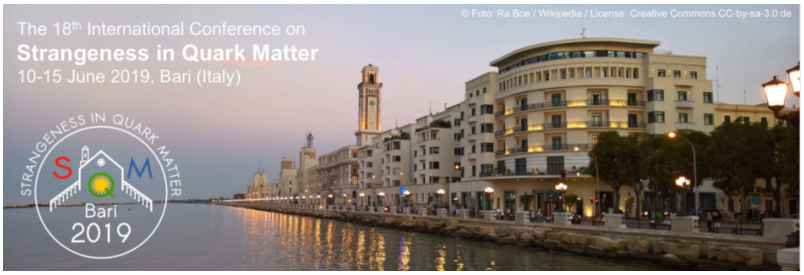

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Latest results on D_s and Λ_c^+ in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE at the LHC

Tuesday, 11 June 2019 15:20 (20 minutes)

Charm quarks are a powerful probe of the Quark-Gluon Plasma (QGP) formed in high energy heavy-ion collisions. Produced in hard scattering processes on a timescale shorter than the QGP formation time, they experience the whole system evolution. There have been extensive researches regarding the production of charm mesons, such as D^0, D^+, D^{*+}, in heavy-ion collisions to investigate the interactions of charm quarks with the QGP constituents and the transport properties of the medium.

At low and intermediate p_T, the D_s-meson measurements can reveal information about the heavy-quark hadronization mechanism. If recombination occurs, at low p_T the relative abundance of D_s mesons with respect to non strange D mesons is expected to be larger in Pb-Pb than in pp collisions.

The measurement of charm-baryon production, and in particular the baryon-to-meson ratio, provides unique information on hadronisation mechanisms, constraining the role of coalescence and testing the predicted presence of diquark states in the QGP.

In this contribution,a comprehensive review of ALICE results on D_s production will be presented, with particular emphasis on the latest ALICE results from the large-size 2018 Pb-Pb data taking campaign at $\sqrt{s_{NN}} = 5.02$ TeV, essential to provide more conclusive results on D_s-meson suppression at low-intermediate p_T and to improve the statistical precision of the v_2 measurement obtained with 2015 Pb-Pb data. In addition, the new results on charm-baryon production from the 2018 Pb-Pb sample will be shown. They will allow for a significant reduction of the uncertainties as well as for an extension of the accessible p_T interval with respect to the first measurement of Λ_c^+ in Pb-Pb collisions based on the 2015 data in the centrality range 0-80%. For both D_s and Λ_c^+ results, comparison to theoretical models will be shown.

Collaboration name

ALICE

Track

Hadronisation and coalescence

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