Contribution ID: **148** Type: **Talk**

D-meson and charmed-baryon measurement in pp and p—Pb collisions with ALICE at the LHC

Tuesday 26 September 2017 14:55 (20 minutes)

Measurements of charmed-hadron production in pp collisions are important to test predictions from perturbative QCD and provide an essential baseline for the studies in A–A collisions. Measurements in p–A collisions also allow studies of possible modifications of the charmed-hadron yields due to cold nuclear matter effects. The study of charm production as a function of the multiplicity of charged particles produced in the collision can give insight into multi-parton interactions and into the interplay between hard and soft processes. The charmed baryon-to-meson ratio is sensitive to hadronisation mechanisms in pp and p–A collisions and it will offer a unique probe of the role of coalescence and predicted presence of diquark states in A–A collisions.

The high precision tracking, good vertexing capabilities and excellent particle identification offered by ALICE allows us to measure hadrons containing charm quarks in wide momentum and rapidity ranges in pp and p–A collisions.

We will present the recent results for D^0, D^+, D^{*+} and D_s^+ mesons reconstructed via their hadronic decays at mid-rapidity in pp collisions at $\sqrt{s}$ = 5.02, 7, 8 and 13 TeV and in p–Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV, collected with the ALICE detector during the LHC Run-1 and Run-2. In particular, we will show the production cross section, nuclear modification factor, multiplicity-dependent studies and the charm production measurement down to $p_{\rm T}$ = 0.
We will report the first measurement of the $p_{\rm T}$-differential cross section of the Λ_c^+ baryon in pp collisions at $\sqrt{s} = 7$ TeV, and in p–Pb collisions at $\sqrt{s_{\rm NN}} = 5.02$ TeV through the full reconstruction of two of its hadronic decay channels and the partial reconstruction of one of its semileptonic decay channels. We will also show the $p_{\rm T}$-differential cross section times branching ratio of the Ξ_c^0 baryon measured in the decay channel $\Xi_c^0 \rightarrow e^+\Xi^-\nu_e$ in pp collisions at $\sqrt{s} = 7$ TeV. The results will be compared with theoretical model predictions.

Author: MENINNO, Elisa (Universita e INFN, Salerno (IT))

Presenter: MENINNO, Elisa (Universita e INFN, Salerno (IT))

Session Classification: QCD and hadron structure

Track Classification: QCD and hadron structure