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The measurement of heavy-flavour production provides insights on the properties of the high-density QCD medium created in heavy-ion collisions.

In particular, the comparison of charm production in pp and in Pb-Pb collisions allows to study the mechanism of in-medium energy loss of heavy quarks. Furthermore, since strange quarks are abundant in the medium, the relative yield of D+s mesons with respect to non-strange charm mesons (D0 and D+) is predicted to be largely enhanced if in-medium hadronization is the dominant mechanism for charm hadron formation in the low momentum region.

We will present the measurement of the D+s production in pp collisions at $\sqrt{s} = 7$ TeV and in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV performed with the ALICE detector at central rapidity through the exclusive reconstruction of the hadronic decay channel $D+s \rightarrow \Phi \pi^+ \rightarrow K^+ K^- \pi^+$. The ratios between the yields of D+s and non-strange D mesons as a function of the transverse momentum will be shown for both pp and Pb-Pb collisions.

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