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Non-prompt D^0-meson production in Pb-Pb collisions at $\sqrt{s_{\mathrm{NN}}}$ = 5.02 TeV with ALICE

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Heavy-flavor quarks (charm and beauty) play an important role in probing the Quark-Gluon Plasma (QGP) formed in the heavy-ion collisions. Due to their heavy masses, charm and beauty quarks are formed in hard scattering processes on a timescale shorter than the QGP formation time. Therefore, they experience all the phases of the medium evolution interacting with the medium constituents and losing energy via collisional and radiative processes. In particular, the mass difference between beauty and charm quarks provides an ideal tool to investigate the predicted mass dependence of parton in-medium energy loss. On this regard, the study of non-prompt D^0-meson production in Pb-Pb collisions provides an indirect measurement of beauty quark production, while the same study in pp collisions, beside providing the needed reference for Pb-Pb studies, is an excellent tool to investigate perturbative Quantum ChromoDynamics (pQCD) calculations.

This poster will show the production cross section of non-prompt D^0 mesons ($\mathrm{b}\rightarrow\mathrm{c}\rightarrow\mathrm{D}^0$) at mid-rapidity in pp collisions at $\sqrt{s}$ = 5.02 TeV. In addition, the latest updates on non-prompt D0 meson production in Pb-Pb at $\sqrt{s_{\mathrm{NN}}}$ = 5.02 TeV will be discussed.

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