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Heavy-flavour jet measurements with ALICE

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Heavy quarks are produced in hard scattering processes during the early stages of a heavy-ion collision at ultra-relativistic energies. Their annihilation rate is negligible, and they participate in the whole medium evolution losing their energy via radiative and collisional processes while traversing through the Quark-Gluon Plasma (QGP) formed in such collisions. This allows us to study the dynamical properties of the QGP. With ALICE at the Large Hadron Collider, heavy quarks are studied by measuring hadronic decays of D (D^* , D^0 , D^+ , D_s) mesons and of Λ_c baryons and semi-leptonic decays of Λ_c and Ξ_c baryons at central rapidity. In addition, electrons from heavy-flavour hadron decays are studied at central rapidity while muons from heavy-flavour hadron decays are investigated at forward rapidity.

The measurement of heavy-flavour jets gives more direct access to the initial parton kinematics and can provide further constraints for heavy-quark energy loss models, in particular adding information on how the radiated energy is dissipated. In order to assess the heavy-flavour production modification in heavy-ion collisions, baseline measurements in pp and p-Pb collisions are needed.

This contribution will include ALICE measurements of the D-tagged charged jets in pp, p-Pb and Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV. Studies of the jet-momentum fraction carried by the D meson in pp collisions at $\sqrt{s} = 7$ TeV will also be presented.

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