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Heavy-flavour jets and correlation measurements with ALICE

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Measurements of heavy-flavours tagged jets and heavy-flavour particle azimuthal correlation with charged particles allow for comparisons of the heavy quarks (charm and beauty) production, propagation, and hadronization across different collision systems. The measurement of heavy-flavour jets and correlation gives direct access to the initial parton kinematics and can provide further constraints for heavy-quark energy loss models.

This contribution presents the production of heavy-flavour decay electrons in pp, p-Pb, and Pb-Pb collisions to study the possible effects of cold nuclear matter and the in-medium mass-dependent energy loss.

In order to investigate the cold and hot nuclear effect on the fragmentation of heavy-flavours, the azimuthal correlations between heavy-flavour decay electrons and charged particles in pp, p-Pb, and Pb-Pb collisions, and beauty-jet production and jets measurement from heavy-flavour decay electrons are presented in pp and p-Pb collisions. Finally, an evaluation of the performance for $D^0 - D^0$ correlation studies based on a simulated analysis for ALICE-3 will be shown.

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