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Production of electrons from heavy-flavour hadron decays in proton-proton and Xe-Xe collisions with ALICE at the LHC

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At the LHC energies, heavy quarks (i.e. charm and beauty) are produced in proton-proton (pp) collisions mainly via hard partonic scattering processes. They provide an essential testing ground for perturbative QCD calculations. In heavy-ion collisions, heavy quarks are produced in a shorter timescale than the quark-gluon plasma. Therefore, they experience the full collision history carrying unique information on the medium properties. On this regard, heavy-flavour measurements in pp collisions serve as a baseline for the heavy-ion measurements.
In this poster we will show the status of measurements of the production of electrons from heavy-flavour hadron decays in pp collisions at different collision energies. The nuclear modification factor (R_{AA}) of electrons from heavy-flavour hadron decays in Xe-Xe collisions will be also discussed. The comparison with Pb-Pb data allows us to investigate the influence of different system geometry and size at similar energy densities. The analysis procedure employed for measuring the spectra of electrons from the heavy-flavour hadron decays will be discussed, including the most recent data-driven method used to subtract the large electron background component from photon conversion and Dalitz decay. Comparisons with model calculations including the interaction of heavy quarks with the hot, dense, and deconfined medium will be presented.

Collaboration

ALICE

Content type

Experiment

Centralised submission by Collaboration

Presenter name already specified

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