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# Measurement of electrons from heavy-flavour hadron decays in Pb-Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV and in Xe-Xe collisions at $\sqrt{s_{\rm NN}}$ = 5.44 TeV

*Tuesday 11 June 2019 18:45 (2 hours)*

The Quark-Gluon Plasma (QGP) is a deconfined state of strongly-interacting matter that is produced at the Large Hadron Collider (LHC) via ultra-relativistic heavy-ion collisions. The QGP properties can be investigated by studying the kinematic features of final-state hadrons containing charm or beauty quarks. Heavy quarks are mainly produced in hard scattering processes among partons, that occur immediately after the nuclei crossing with a time-scale shorter than the QGP formation time. Therefore, they are an effective probe to study the full evolution of the deconfined medium.

In this contribution, the measurements of the production of electrons from heavy-flavour hadron decays in central (0-10%), semi-central (30-50%) and peripheral (60-80%) Pb-Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV, and in central (0-20%) and semi-central (20-40%) Xe-Xe collisions at $\sqrt{s_{\rm NN}}$ = 5.44 TeV are shown. Electrons are reconstructed in the central rapidity region using different identification strategies, depending on the transverse momentum interval. The photonic tagging method is adopted for the subtraction of the main background component, which consists of electrons from photon conversions $\gamma \rightarrow {\rm e}^+{\rm e}^-$ and Dalitz decays of light neutral mesons $\pi^0, \eta \rightarrow \gamma{\rm e}^+{\rm e}^-$. Finally, the invariant yield of electrons from heavy-flavour hadron decays and the nuclear modification factor ($R_{\rm AA}$) are measured. The deviation of the $R_{\rm AA}$ from unity quantifies the energy lost by heavy quarks while traversing the plasma due to collisional and radiative processes. In addition, the comparison of the measured $R_{\rm AA}$ in different colliding systems and centrality classes provides insight on the path-length dependence of medium-induced parton energy loss.

## Collaboration name

ALICE

## Track

Heavy Flavour

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