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Measurement of low transverse momentum electrons from heavy-flavour hadron decays in Pb-Pb collisions at 5 TeV with ALICE

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Due to their high masses ($m_c \approx 1.5\,\mathrm{GeV}/c^2$, $m_b \approx 4.8\,\mathrm{GeV}/c^2$), charm and beauty quarks are mostly produced in the initial hard scattering processes, happening immediately after the lead nuclei collide. This process has typical time scales shorter than the Quark-Gluon Plasma formation time, therefore by studying the kinematic properties of heavy-flavour particles, the medium can be investigated. In particular, it is important to understand how these quarks lose energy by traversing the medium and to test shadowing, hadronization and flow mechanisms.

In this poster the status and progresses on the results concerning open heavy-flavour detection through semi-electronic decay channels in Pb-Pb collisions at the centre of mass energy per nucleon pair of $\sqrt{s_{NN}} = 5.02\,\mathrm{TeV}$ registered by ALICE will be shown. Electrons are identified using the information provided by the central barrel detectors (Inner Tracking System, Time Projection Chamber, Time Of Flight). Most of the electrons come from background sources, such as photon conversions
in the detector material and Dalitz decays of light mesons,
which are tagged with an invariant mass technique.
After their subtraction, the p_T spectrum of electrons from heavy-flavour hadron decays
in the transverse momentum region $0.5\,\mathrm{GeV}/c \leq p_T \leq 6\,\mathrm{GeV}/c$ can be obtained and the nuclear modification factor R_{AA} can be computed.

Content type

Experiment

Collaboration

ALICE

Centralised submission by Collaboration

Presenter name already specified

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