

5th International workshop on heavy quark production in heavy-ion collisions



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Measurement of the nuclear modification factor and the elliptic flow of electrons from heavy flavour decays in Pb-Pb collisions at 2.76 TeV with ALICE

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In heavy-ion collisions, charm and beauty quarks are produced in the initial hard scattering processes. They propagate then through the created Quark Gluon Plasma. Therefore they are a sensitive tool to probe the medium's properties.

One way to measure heavy-quarks is via electrons from the semileptonic decay channels of open charm and beauty hadrons. The suppression of heavy flavour electrons, quantified by the nuclear modification factor R_{AA} , carries information about the heavy quark energy loss mechanism in the medium.

At low transverse momentum, the level of thermalization of heavy quarks can be studied via the azimuthal anisotropy of the heavy flavour electron emission in the transverse plane, the elliptic flow v_2 . At high p_t , v_2 provides insight on the path length dependence of parton energy-loss.

In this talk we present R_{AA} and v_2 measurements of electrons from heavy flavour decays at central rapidity with ALICE in central (0-10%) and semi-central (20-40%) Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV, respectively. The electrons are identified using the Time Of Flight detector and Time Projection Chamber at low momenta, as well as the Electromagnetic Calorimeter at higher momenta. The latest detector also provides the possibility to trigger on electrons in the collision.

We compare the results to different theoretical models.

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