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R_{AA} of electrons from beauty-hadron decays in Pb-Pb collisions at 5.02 TeV with ALICE

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In relativistic heavy-ion collisions, heavy quarks (charm and beauty) are predominantly produced in the early stage of the collisions via hard partonic scattering processes. Therefore, they experience the full evolution of hot and dense QCD matter in which quarks and gluons are de-confined (Quark-Gluon Plasma, QGP) created by such collisions, and can be an effective probe to study the QGP properties. In particular, while traversing the medium, partons can lose energy via both collisional and radiative processes, and in-medium parton energy loss is expected to depend on the parton color charge and mass. Since beauty quarks are heavier than charm quarks, the mass dependence of the in-medium parton energy loss can be studied by the comparison between nuclear modification factors (R_{AA}) of charm and beauty hadrons.

In the ALICE experiment, beauty production is studied by means of non-prompt D mesons and electrons from beauty-hadron decays at mid-rapidity. The electrons are identified using the Time Projection Chamber, the Time-Of-Flight and the Electromagnetic Calorimeter, and the tracks are reconstructed using the Inner Tracking System and the Time Projection Chamber. In this poster, the R_{AA} of electrons from beauty-hadron decays in 0-10% and 30-50% Pb-Pb collisions at 5.02 TeV will be presented.

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