

# Study of production of electrons from beauty-hadron decays in pp collisions at $\sqrt{s} = 13$ TeV and Pb-Pb collisions at $\sqrt{s} = 5.02$ TeV with ALICE

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Heavy quarks, charm and beauty, are expected to be effective probes for the hot and dense medium (QGP) produced in high-energy heavy-ion collisions. They are produced in the early stage of the collision, almost exclusively in hard partonic scattering, and therefore they experience the full evolution of the QGP allowing to study the in-medium partonic energy-loss. In particular, the medium-induced parton energy loss is expected to depend on the parton mass and colour charge. This results in a reduction of beauty-quark energy loss compared to charm-quark energy loss. Therefore the separate measurement of the beauty-quark production from charm-quark production allows us to test various parton energy loss models. In addition, the measurement provides a crucial testing ground for perturbative QCD calculations and provides a mandatory baseline for corresponding studies in Pb-Pb collisions. The ALICE detector which has excellent particle identification and tracking capabilities allows investigating beauty production via the measurement of beauty-decay electrons. The particle identification is performed by TPC (Time Projection Chamber) and TOF (Time Of Flight). The electrons from beauty-hadron decays are separated statistically from background electrons based on the track impact parameter distribution that result to be wider for the beauty-decay electrons thanks to the long lifetime of the beauty hadrons.

In this poster, we present recent results and analysis status of beauty production in pp collisions at  $\sqrt{s_{NN}}=13$  TeV and in Pb-Pb collisions at  $\sqrt{s_{NN}}=5.02$  TeV.

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