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## Measurements of leptons from open heavy-flavour decays in pp, p-Pb and Pb-Pb collisions with ALICE at the LHC

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Quantum Chromodynamics (QCD) predicts that at high energy density, ordinary nuclear matter undergoes a phase transition towards a new state of matter called Quark-Gluon Plasma (QGP) that is characterized by deconfined quarks and gluons. High-energy Pb-Pb collisions are used to reach the thermodynamical conditions to create the QGP. As heavy quarks (charm and beauty) are produced in the initial hard scatterings of partons in the collision, they can be used as probes to investigate the properties of the QGP.

Measurements in p-Pb collisions are useful to study the cold nuclear matter effects that can affect the particle production by initial or final-state interactions. Also, a precise measurement of open heavy-flavour production cross sections in pp collisions is essential to assess the accuracy of Next to Leading Order perturbative QCD calculations that suffer from large uncertainties. Besides this, open heavy-flavour studies in pp collisions are an essential baseline for the corresponding measurements in p-Pb and Pb-Pb collisions.

ALICE is one of the large experiments at the LHC and was designed to study and characterize the QGP. In ALICE, open heavy-flavour hadrons are measured via their hadronic decay at mid rapidity and via their semileptonic decay both at mid (electrons) and forward (muons) rapidity.

In this talk the latest results on open heavy-flavour decay leptons in pp, p-Pb and Pb-Pb collisions with the ALICE experiment will be presented.

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