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Leptons from J/ψ and heavy-flavour hadron decays in pp and Pb-Pb collisions studied with ALICE at the LHC

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Abstract content
   (Max 300 words)

Heavy quarks and quarkonium states are believed to be sensitive probes for the study of the evolution as well as the properties of the hot and dense medium, formed in ultra-relativistic heavyion collisions, since they are produced at a very early stage in the initial hard scattering processes. Apart from providing the crucial reference for nucleus-nucleus collisions, proton-proton collisions are also of great interest as they allow a test of perturbative QCD in a new regime of low Bjorken-x values at the LHC.

The ALICE detector has proven to have excellent tracking, particle identification as well as precise vertexing capabilities. These specific detector characteristics result in a low momentum reach for quarkonia and open heavy-flavour hadrons which is unique to the LHC. One approach to e.g. J/ψ and heavy-flavour measurements is via their decay leptons which are measured at mid-rapidity in the central barrel and the muon spectrometer at forward rapidity.

In this talk, after giving a brief description of the detector, we will present the latest results from measurements of J/ψ from di-leptonic decays and of leptons from heavy-flavour hadron decays at both forward ($2.5 < \eta < 4.0$) and central ($|\eta| < 0.9$) rapidity in pp collisions at $\sqrt{s}$ = 2.76 and 7 TeV and their nuclear modification factor (RAA) in Pb-Pb collisions at $\sqrt{s_{NN}}$ = 2.76 TeV.

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