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Recent results on quarkonia in AA collisions from ALICE at the LHC

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Heavy quarkonium states are expected to provide essential information on the properties of the deconfined state of nuclear matter, the Quark-Gluon Plasma (QGP), formed in the early stages of ultra-relativistic heavy-ion collisions. In particular, the suppression of the strongly bound quarkonium states via the color screening mechanism can be seen as an effect of deconfinement. ALICE results on charmonium suppression in Pb–Pb collisions at the LHC seem to indicate that additional mechanisms as J/ψ production via recombination of charm and anti-charm quarks also play a role, leading to a more complex picture of the quarkonium melting in the QGP. The contribution of this so-called (re)generation mechanism is expected to be smaller for bottomonia as for charmonia.
In ALICE, quarkonia are measured down to zero transverse momentum via the dielectron (dimuon) decay channel in the central barrel (forward muon spectrometer) for the rapidity window $|y| < 0.9$ ($2.5 < y < 4$). We will report on the recent charmonium and bottomonium measurements in nucleus-nucleus collisions with ALICE at the LHC energies. The J/ψ and Υ(1S) nuclear modification factors in Pb–Pb collisions as a function of transverse momentum, rapidity and collision centrality will be presented as well as the J/ψ elliptic flow. Results on J/ψ production in Xe–Xe collisions will also be addressed. Finally, comparisons with other experimental measurements and theoretical calculations will be discussed.

Author: Dr LARDEUX, Antoine (University of Oslo (NO))

Presenter: Dr LARDEUX, Antoine (University of Oslo (NO))

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