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Multi-differential study of J/ψ RAA in forward rapidity in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE

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At high temperature, Lattice Quantum Chromodynamics (LQCD) predicts the existence of dense and hot nuclear matter which behaves as a deconfined medium of quarks and gluons. Inside such medium, quarkonia are suppressed due to the color-screening effect. However, at LHC energies an enhancement in the production of J/ψ has been observed. This enhancement effect is more prominent at lower dimuon transverse momentum ($p_T < 4$ GeV/c) and central Pb-Pb collisions.

In the present study, the J/ψ production as measured by ALICE in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV, in the forward rapidity region ($2.5 < y < 4.0$), is discussed. The J/ψ nuclear modification factor R_{AA} has been measured as a function of rapidity in different p_T bins (0 - 2 GeV/c, 2 - 4 GeV/c, 4 - 6 GeV/c and > 6 GeV/c) and centrality bins (0 - 20 %, 20 - 40 % and > 40 %). The study of the R_{AA} as a function of rapidity and transverse momentum may provide a deeper insight on the mechanism of J/ψ regeneration and suppression.

New ALICE results on the J/ψ nuclear modification factor measured as a function of rapidity, in p_T and centrality classes, in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV will be presented.

Content type

Experiment

Collaboration

Centralised submission by Collaboration

Presenter name already specified

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