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Measurement of the inclusive, prompt and non-prompt J/ψ production in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ALICE

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Quarkonium production is a direct probe of deconfinement in heavy-ion collisions. For J/ψ , a bound state of $c\bar{c}$ quarks, the (re-)generation is found to be the dominant production mechanism at low transverse momentum (p_T) and in central collisions at the LHC energies.

In addition, the non-prompt component of J/ψ production from b-hadron decays allows one to access the interaction of b-hadrons with the QGP down to low transverse momentum.

In this talk, the measurements of the J/ψ nuclear modification factor R_{AA} , as a function of centrality and p_T in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV will be shown. Prompt and non-prompt J/ψ production measurements at midrapidity ($|y| < 0.9$), as well as inclusive J/ψ results at large rapidity ($2.5 < y < 4$), will be presented exploiting the whole data sample collected from Run 2. The prompt/non-prompt separation extends down to very low p_T and its precision is improved significantly compared to the previous publications. Additionally, the measurements of inclusive, prompt and non-prompt J/ψ in p-Pb collisions will be shown, and their consequences for the interpretation of nucleus-nucleus data will be discussed. All the results will be compared with model calculations.

In-person participation

Yes

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