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Measurement of the inclusive, prompt and non-prompt J/ψ production in Pb–Pb collisions at $\sqrt{s_{\rm NN}}$ = 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 ($p_{\rm T}$) 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 $R_{\rm AA}$, as a function of centrality and $p_{\rm T}$ in Pb–Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV will be shown. Prompt and non-prompt J/ψ production measurements at midrapidity($|y| < 0.9$), will be presented exploiting the whole data sample collected from Run 2. The prompt/non-prompt separation extends down to very low $p_{\rm T}$ and its precision is improved significantly compared to the previous publications. All the results will be compared with model calculations.

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