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J/ψ production at the STAR experiment

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Suppression of J/ψ production in heavy-ion collisions due to color screening of quark and antiquark potential in the deconfined medium has been proposed as a signature of quark-gluon plasma (QGP) formation. However, there are other effects that may alter the observed J/ψ yields, such as cold nuclear matter effects, and statistical coalescence of c-$\bar{c}$ pairs. Indeed, recent measurements in Au+Au and d+Au collisions show that these effects play a non-negligible role. Measurements of J/ψ invariant yields and elliptic flow (v_2) in different collision energies, collision systems, and centralities can shed new light on understanding the interplay of these effects for J/ψ production and properties of the QGP.

In this talk I will report STAR measurements of J/ψ production at mid-rapidity, reconstructed via the dielectron decay channel, in Au+Au collisions at $\sqrt{s_{NN}} = 39$ GeV, 62.4 GeV, 200 GeV together with results from U+U collisions at $\sqrt{s_{NN}}$ = 193 GeV. Nuclear modification factor will be shown as a function of centrality and p_T. I will also present results on J/ψ v_2 in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV.

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