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Excess of J/ψ yield at very low p_T in Au+Au collisions at $\sqrt{s_{NN}}$ = 200 GeV and U+U collisions at $\sqrt{s_{NN}}$ = 193 GeV measured with 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 the QGP formation. Other mechanisms, such as the cold nuclear matter effects and J/ψ regeneration from charm quark-antiquark recombination in the medium, can contribute to the observed modification of the J/ψ production in heavy-ion collisions. Unexpectedly, a significant excess of the J/ψ yield at very low transverse momenta (pT< 0.3 GeV/c) was observed by the ALICE collaboration in peripheral Pb+Pb collisions at sNN$^{\overline{\quad\quad}}\sqrt{}$ = 2.76 TeV at forward-rapidity, which can not be explained by the aforementioned effects. It has been hypothesized that such J/ψ's are produced in the coherent photoproduction in Pb+Pb collisions at impact parameters smaller than twice the nuclear radius, which would be very challenging for the existing models developed to describe the coherent photoproduction in ultra-peripheral collisions. Measurements of J/ψ production at very low pT for different collision energies, collision systems, and collision geometries can shed new light on the origin of the excess.\

In this presentation we report the STAR measurements of J/ψ production at very low pT in Au+Au collisions at sNN$^{\overline{\quad\quad}}\sqrt{}$ = 200 GeV and U+U collisions at sNN$^{\overline{\quad\quad}}\sqrt{}$ = 193 GeV at mid-rapidity. Centrality and pT dependencies of J/ψ production cross sections and nuclear modification factors will be presented.

Primary author: 查, 王妹 (N)

Presenter: 查, 王妹 (中国科学技术大学近代物理系)

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