Energy dependence of J/ψ production in Au+Au collisions at $\sqrt{s_{NN}}$ = 14.6, 19.6 and 27 GeV at STAR

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Measurements of heavy quarkonia in heavy-ion collisions play a crucial role in studying the properties of the quark-gluon plasma (QGP). The dissociation of J/ψ, caused by the color screening effect, was proposed as a direct signature of the QGP formation. However, recombination of deconfined charm-anticharm ($c\bar{c}$) pairs complicates the interpretation of the observed J/ψ suppression in heavy-ion collisions, and its contribution is expected to be smaller at lower collision energies. Therefore, measuring the beam energy dependence of J/ψ production will help disentangle different effects.

In this poster, we report the measurements of inclusive J/ψ production in Au+Au collisions at $\sqrt{s_{NN}}$ = 14.6, 19.6 and 27 GeV using the Beam Energy Scan Phase II (BES-II) data recorded by the STAR experiment. The J/ψ invariant yields and nuclear modification factors (R_{AA}) are presented as a function of centrality and transverse momentum. Beam energy dependence of J/ψ R_{AA} is discussed together with model comparisons.