

Measurement of sequential suppression of the excited-state bottomonia and observation of $Y(3S)$ in PbPb collisions at $\sqrt{s_{NN}}=5.02$ TeV in CMS

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The information on the quarkonium production in heavy ion collisions is important to probe the heavy-quark dynamic in the quark-gluon plasma (QGP). The suppression of quarkonia production is particularly interesting since it comprises different in-medium effects such as color screening or recombination. But due to the inclusiveness of the nuclear modification factor used to quantify the suppression, it is important to have an improved resolution of the experimental data to distinguish the effects across the phase space. In this presentation, we provide the latest result of the excited Upsilon states measurement in heavy-ion collisions obtained by the CMS Collaboration. The experimental data provide a precision measurement of the nuclear modification factors of bottomonia in PbPb collisions with respect to pp collisions, and the ratio of the $Y(3S)$ over $Y(2S)$ states. The results are compared with the theoretical predictions, which may provide strong constraints to our current knowledge of the QGP model.

Theory / experiment

Experiment

Group or collaboration name

CMS Collaboration

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