

Experimental review of bottomonium production in heavy-ion collisions at LHC

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The primary subject in the research of high-energy heavy-ion collisions is to understand the nuclear matter produced in these interactions.

Bottomonia have been considered as golden probes to study the properties of such matter, as they are produced at early stages of collisions via hard-scattering processes. Also, their spectral functions are modified by Debye screening and interactions with partons inside the medium, suggesting sequential suppression of bottomonium states in heavy-ion collisions compared to the production in proton-proton (pp) collisions. This remarkable signature was first observed in lead-lead (PbPb) collisions at a nucleon-nucleon (NN) center-of-mass energy $\sqrt{s_{\text{NN}}} = 2.76$ TeV using the CMS detector at the CERN LHC. Bottomonium production in small collision systems e.g. pp or pPb collisions, has also been a subject with intensive interest, such as studying the initial state “cold nuclear matter (CNM)” effect and collectivity in high-multiplicity events.

This talk reviews and discuss the results of the bottomonium measurements at the CERN LHC reported by ALICE, ATLAS, CMS, and LHCb Collaborations in different collision systems.

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