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Bottomonium suppression in nucleus-nucleus and proton-nucleus collisions

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We present the first application of the Comover Interaction Model (CIM) to $\Upsilon(nS)$ production in nucleusnucleus and proton-nucleus collisions from fixed-target to collider energies. The CIM offers an elegant way to explain the relative suppression of the excited Υ states observed in proton-nucleus collisions at the LHC. From these relative suppressions, we are able to constrain the comover cross sections for the different bottomonium states which encapsulate final-state interactions. Together with initial-state effects, such as the nuclear modification of the parton densities, we obtain significant $\Upsilon(nS)$ suppressions in nucleus-nucleus collisions compared to the expected impact of the colour screening. This renders the interpretation of the sequential-suppression pattern observed by CMS in PbPb collisions more complex to interpret.

Summary

Presentation type

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