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First measurement of $\Upsilon(3S)$ meson in PbPb collision.

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The suppression of bottomonium states is closely related to the interaction with the QGP, supposedly created in heavy ion (AA) collisions. The different binding energies of bottomonium states provide a unique pattern of yield modification which is useful to study thermal properties of the QGP. Previous results from CMS have shown the evidence of sequential suppression for $\Upsilon(1S)$, $\Upsilon(2S)$, and $\Upsilon(3S)$. However, the given statistics were limited to clearly identify the $\Upsilon(3S)$ meson. In this talk, we present the new measurements of excited bottomonium states with improved analysis technique and high-statistics data, which enables us to observe the $\Upsilon(3S)$ meson in AA collisions for the first time. The results are compared with various theoretical calculations and provide strong constraints to the dynamical models.

In-person participation

No

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