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Ψ(2S) and J/Ψ modification in pPb and PbPb collisions at 5.02 TeV with CMS

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Charmonium production in PbPb collisions requires the inclusion of many phenomena to be understood, such as melting in the quark gluon plasma and statistical recombination, on top of cold nuclear matter effects (modifications of nPDFs, initial-state energy loss, nuclear break-up), better probed in pPb collisions. Final results on the relative J/ψ and ψ(2S) modification, based on the pp and PbPb data collected at $\sqrt{s_{NN}}$ = 5.02 TeV by CMS in 2015, will be reported. In addition, new prompt J/ψ results in PbPb collisions at $\sqrt{s_{NN}}$ = 5.02 TeV, including the R_{AA}, will be presented over a wide kinematic and centrality range ($3 < p_T < 30$ GeV/c, $|y| < 2.4$, and fine event-centrality intervals). The results are compared to those obtained at $\sqrt{s_{NN}}$ = 2.76 TeV over the same kinematic range, considering also the J/ψ v_2 obtained at the latter energy. Final prompt J/Ψ results in pPb collisions at 5.02 TeV will also be presented, including the new measurement of the R_{pA} using the 2015 pp data taken at the same energy. At last, new results will be reported regarding prompt Ψ(2S) meson production in pPb collisions at $\sqrt{s_{NN}}$ = 5.02 TeV, as a function of transverse momentum and rapidity and down to p_T = 4 GeV.

Preferred Track

Quarkonia

Collaboration

CMS

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