



Contribution ID: 686

Type: **Contributed talk**

CMS Charmonia results from Run I

Wednesday, 30 September 2015 10:00 (20 minutes)

A multi-dimensional analysis of charmonia in pp, pA, and AA collisions with the CMS detector will be presented. The prompt J/psi results are obtained using the $L_{int} = 5.4pb^{-1}$ pp, the $L_{int} = 35nb^{-1}$ pPb, and the $L_{int} = 150\mu b^{-1}$ PbPb data recorded between 2011 and 2013. The prompt J/psi nuclear modification factors (R_{AA}) and azimuthal anisotropy (v_2) in PbPb will be presented, and their impact on the understanding of the charmonium production will be discussed. In addition, the suppression pattern of prompt psi(2S) and J/psi in pp and PbPb collisions will be compared, addressing the phenomenology of the charmonium excited state versus ground state in a medium. The pPb differential cross-sections of prompt J/psi will be shown in a wide kinematic region, for transverse momentum spanning from 2 to 30 GeV /c and a rapidity interval between -2.87 to 1.93 in the center of mass of the collision. The ratio of yields in forward (p-going beam) and backward (Pb-going beam) directions, R_{FB} , is measured, to quantify the asymmetry of cross-sections as a function of p_T , rapidity, and event activity. A significant asymmetry is observed for $2 < p_T < 10$ GeV/c region, with no rapidity dependence, and with the effect monotonically increasing for higher event activity.

On behalf of collaboration:

CMS

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Session Classification: Quarkonia III

Track Classification: Quarkonia