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Beyond nPDFs effects : Prompt J/ψ and ψ(2S) production in pPb and pp collisions (Article) (Open Access)

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Abstract

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A multi-dimensional analysis of prompt charmonia in pp and pPb collisions at  $s_{NN}=5.02\text{TeV}$  with the CMS detector is presented. The pPb differential cross-sections of prompt J/ψ are shown in a wide kinematic region, for transverse momentum  $p_T$  spanning from 2 to 30 GeV/c and a rapidity interval between -2.4 to 1.93 in the center of mass of the collision. The final results on prompt ψ(2S) meson production cross section in pp and pPb collisions at 5.02 TeV are also reported as a function of  $p_T$  and rapidity, for  $p_T$  from 4 to 30 GeV/c. The nuclear modification factor is found to be smaller than that of prompt J/ψ in all measured bins, especially at low  $p_T$  and at backward rapidity. Such a different behaviour between the ground and excited states cannot be reproduced considering nPDF effects alone. © 2018

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