

# Quarkonium production in pp collisions with CMS

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Using large data samples of di-muon events, CMS has performed detailed measurements in the field of quarkonium production. Differential cross-sections of  $J/\psi$ ,  $\psi(2S)$  and  $Y(nS)$  states in  $p_T$  and rapidity will be presented, separated in prompt and non-prompt contributions for the charmonium case: experimental results are compared with recent predictions in the context of NLO nonrelativistic QCD and the FONLL scheme. Studies of P-wave charmonia and bottomonia ( $\chi_c$ ,  $\chi_b$ ), using the decay mode  $(J/\psi, Y) + \gamma$  where the photon converts in an  $e^+e^-$  pair inside the detector, will be also discussed.

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