

Results on quarkonium production and polarization in pp collisions with the CMS detector

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Collaboration

CMS

Abstract content

Explaining the production dynamics of conventional quarkonium has been a challenge for nearly 20 years. The state-of-the-art theoretical framework, Non-Relativistic QCD (NRQCD), nowadays explains relatively well the observed production cross-sections, but it also predicts transverse polarization of the $q\bar{q}$ states at high transverse momentum, which is not observed. This talk presents the CMS quarkonium production results, in pp collisions, placing emphasis on the most recent measurements, which include the cross-sections and polarizations of all five S-wave states. We will also present new results on P-wave quarkonium production in the bottomonium family.

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