

# Energy dependence of direct-quarkonium production in pp collisions from fixed-target to LHC energies:complete one-loop analysis.

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We compute the energy dependence of the pt-integrated cross section of directly produced quarkonia in pp collisions at next-to-leading order within the nonrelativistic QCD framework. We treat the pt-integrated and the pt-differential cross sections as two different observables to investigate whether the CO LDMEs extracted from the fits of the pt-differential cross sections can predict the pt-integrated cross sections. We also consider the cross sections calculated in CSM and CEM. Our study do not support the past claims that color-octet transitions are dominantly responsible for low-pt quarkonium prodution.

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