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Theoretical analysis of the double parton scattering in quarkonium production in proton-proton collision at LHC

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The production process of quarkonia in proton-proton (pp) collision is a very good probe of the parton structure of the proton.

Recent experimental data of the production of J/ψ +vector boson or quarkonium pairs at the LHC and Tevatron suggest the relevance of double parton scattering (DPS).

In this talk, we will discuss the single parton scattering (SPS) contribution of the $J/\psi + Z$, $J/\psi + W$, and $J/\psi + J/\psi$ productions in hadron collision.

By revisiting the computation of the SPS contribution to $J/\psi + Z$ and $J/\psi + W$ production, we will demonstrate that the ATLAS data in fact show evidence for DPS.

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