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# Multiplicity dependence of quarkonia production

*Wednesday, 25 March 2020 15:36 (23 minutes)*

Abstract In this talk we present our theoretical results for the multiplicity dependence of $J/\psi$ production and compare it with recent experimental data from STAR and ALICE collaborations. We argue that a rapidly growing multiplicity dependence presents a strong evidence in favor of multigluon fusion mechanisms of the quarkonia states. We demonstrate that the experimentally observed multiplicty dependence might be described by 3-gluon fusion mechanism, whereas conventional 2-gluon fusion mechanism underestimates the experimental data. We also show that the 3-gluon fusion can correctly describe the shape of the rapidity and transverse momentum dependence, and potentially could give a sizeable contribution to produced quarkonia yields. We also make predictions for other $1S$-quarkonia states, such as $\psi(2S)$ and $\Upsilon(1S)$, and demonstrate that the multiplicity dependence for these states should be close to multiplicity dependence for $J/\psi$.

This presentation is partially based on our recent submission https://arxiv.org/abs/1910.13579.

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