

XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



Contribution ID: 37

Type: **Contributed Talk**

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/ψ 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 multiplicity 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/ψ .

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

Primary authors: SIDDIKOV, Marat (Federico Santa Maria Technical University); Prof. SCHMIDT, Ivan (Federico Santa Maria Technical University); Dr LEVIN, Eugene (Federico Santa Maria Technical University)

Presenter: SIDDIKOV, Marat (Federico Santa Maria Technical University)

Session Classification: QCD with Heavy Flavors and Hadronic Final States

Track Classification: QCD with Heavy Flavors and Hadronic Final States