## XXVIII International Workshop on Deep Inelastic Scattering and Related Subjects



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## Multiplicity dependence of quarkonia production

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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 multipluon 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  $J/\psi$ .

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

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