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Photo- and hadroproduction of heavy meson pairs

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In this talk we present our results on the inclusive photo- and hadroproduction of heavy charmonia-bottomonia pairs in the color glass condensate framework. For the photoproduction, we found that the cross section of the process is sensitive only to dipole and quadrupole forward scattering amplitudes (2- and 4-point correlators of Wilson lines). Using the phenomenological parametrizations of these amplitudes, we estimated numerically the production cross sections in the kinematics of the ultraperipheral collisions at the LHC and the future Electron Ion Collider. We found that the contribution controlled by the quadrupole amplitude is dominant, and for this reason, the suggested channel can be used as a gateway for studies of this nonperturbative object. The hadroproduction cross-section has more complicated structure and is sensitive to commingled contributions from dipole, quadrupole, sextupole and octupole forward scattering amplitudes. Using the parametrizations of the sextupoles and octupoles available from the literature, we found that the contributions of sextupoles and octupoles numerically is comparable to contributions of dipoles and quadrupoles.

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Author: SIDDIKOV, Marat

Presenter: SIDDIKOV, Marat

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