

Exclusive photoproduction of excited quarkonia in ultraperipheral collisions

Monday 11 December 2023 19:00 (15 minutes)

In this talk, we discuss the exclusive photoproduction of ground and excited states of $\psi(1S, 2S)$ and $\Upsilon(1S, 2S)$ in ultraperipheral collisions (UPCs). Using the potential approach in order to obtain the vector meson wave function, we find a good agreement of our calculations with data from the LHC and HERA colliders for $J/\psi(1S, 2S)$ and $\Upsilon(1S)$ in γp collisions. We extend the calculations, via Glauber–Gribov model, to the nuclear case applying them to AA UPCs. Our results, compared to the LHC data, show the necessity of the inclusion of two main nuclear effects, called gluon shadowing and finite coherence length.

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