

UPC 2023: International workshop on the physics of Ultra Peripheral Collisions

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'Rapidity gaps in UPC: status and perspectives'

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We consider processes with production of a leading heavy vector meson, dijet followed by rapidity gap in UPC. We argue that the knock out mechanism of the elastic scattering of hard Pomeron off constituents of nucleon/nucleus dominates in a wide range of momentum transfer due to the structure of the resummed Pomeron. The suit of rapidity gap processes in which neutrons are detected in the zero degree calorimeter is described which would allow to probe in a great detail the small x dynamics both in hard and soft regimes reaching in the hard regime $x \sim 10^{-5}$. In particular, it would be possible to probe impact parameter dependence of the gluon nuclear shadowing.

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