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Small-x resummation for DVCS, TCS and exclusive vector meson production

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Some hard exclusive processes can be described in a framework of QCD collinear factorization. The amplitudes of Deeply Virtual Compton Scattering (DVCS), its crossing counterpart Timelike Compton Scattering (TCS) and the amplitudes of neutral light and heavy vector meson (VM) production can be calculated as a convolution of hard coefficient functions and generalized parton distributions. It is known that the first perturbative corrections to the processes of VM production are very large in diffractive region of small x, which calls for the resummation of enhanced contributions at higher orders. We showed that based on BFKL resummation approach applied earlier to small x DIS may be generalized to these hard exclusive reactions. We obtain analytical results for resummed coefficient functions of DVCS, TCS and VM production processes. Our analysis shows that the account of the high energy resummation stabilizes predictions for heavy VM photoproduction.

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