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Probing the theoretical description of central exclusive production

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We investigate the theoretical description of the central exclusive production process. Taking Higgs production as an example, we sum logarithmically enhanced corrections appearing in the perturbation series to all orders in the strong coupling. In addition, we perform a fixed order calculation of the corrections relevant for the Sudakov factor appearing in the process. Both approaches agree with those originally presented by Khoze, Martin and Ryskin, except that the scale, μ , appearing in the Sudakov factor must be changed from $\mu = 0.62 \sqrt{s}$ to $\mu = \sqrt{s}$, where s is the invariant mass squared of the central system. We discuss the effects of this modification on predictions for the LHC and the Tevatron.

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