

Full top-quark mass dependence in diphoton production at NNLO in QCD

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We consider the diphoton production in hadronic collisions at the next-to-next-to-leading order (NNLO) in perturbative QCD, taking into account for the first time the full top quark mass dependence. We present the computation of the two-loop form factors for diphoton production in the quark annihilation channel, that are relevant for the phenomenological studies of the full NNLO. The MIs are written in the so-called canonical logarithmic form, except for the elliptic ones. We perform a study on the Maximal Cut in order to show the elliptic behaviour of the non-planar topology. The Master Integrals are evaluated by means of differential equations in a semy-analytical approach through the generalised power series technique. Finally we use this result with all the other contributions showing selected numerical distributions.

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