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Precision calculations for top-quark pair production at the LHC

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In this work we will present predictions for top-quark pair differential distributions at the LHC13 at NNLO QCD accuracy and including EW corrections. For the latter we include not only contributions of $\mathcal{O}(\alpha_s^2\alpha)$, but also those of order $\mathcal{O}(\alpha_s\alpha^2)$ and $\mathcal{O}(\alpha^3)$. We will discuss the difference between the additive and multiplicative approach for the combination of QCD and EW corrections. Furthermore we will present results for the inclusive A_C as well as several differential asymmetries at the LHC8. The material presented will be based on the arXiv:1705.04105 and arXiv:1711.03945 papers.

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