

Four top final states with NLO accuracy in perturbative QCD: 4 lepton channel

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Reference: <https://arxiv.org/abs/2401.10678>

Triggered by the observation of four top-quark production at the LHC by the ATLAS and CMS collaboration we report on the calculation of the next-to-leading order QCD corrections to the Standard Model process $pp \rightarrow t\bar{t}t\bar{t}$ in the 4ℓ top-quark decay channel. We take into account higher-order QCD effects in both the production and decays of the four top quarks. The latter effects are treated in the narrow width approximation, which preserves top-quark spin correlations throughout the calculation. We present results for two selected renormalisation and factorisation scale settings and three different PDF sets.

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