

Complete NLO corrections to off-shell $t\bar{t}$ production in the $\ell + j$ channel

Tuesday, July 22, 2025 2:20 PM (20 minutes)

I will show preliminary results for the complete NLO corrections to the $pp \rightarrow t\bar{t} + X$ process in the lepton+jets decay channel at the Run III energy of $\sqrt{s} = 13.6$ TeV at the LHC. The calculation includes all resonant and non-resonant Feynman diagrams, interference effects, and Breit-Wigner propagators as well as all higher-order QCD and EW effects. The integrated and differential cross sections for multiple observables will be presented. The talk will focus on defining the complete NLO corrections to the process, accounting for both QED and QCD divergences, in an infrared-safe manner using fragmentation functions and the photon-to-jet conversion function.

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