



Contribution ID: 9

Type: not specified

NLO QCD predictions for off-shell $t\bar{t}W$ production in association with a light jet at the LHC

Tuesday, October 17, 2023 4:00 PM (30 minutes)

We present full off-shell NLO QCD results for $pp \rightarrow t\bar{t}W^+ j + X$. We concentrate on the multi-lepton decay channel at the LHC with $\sqrt{s} = 13$ TeV. In our calculation off-shell top quarks and gauge bosons are described by Breit-Wigner propagators, furthermore, double-, single- as well as non-resonant top-quark contributions along with all interference effects are consistently incorporated at the matrix element level. We present results for both integrated and differential fiducial cross sections for various renormalisation and factorization scales and different PDF sets. Lastly we investigate the effects of the additional jet activity by comparing $pp \rightarrow e^+ \nu_e \mu^- \bar{\nu}_\mu \tau^+ \nu_\tau b\bar{b} j + X$ and $pp \rightarrow e^+ \nu_e \mu^- \bar{\nu}_\mu \tau^+ \nu_\tau b\bar{b} + X$.

Author: REINARTZ, Minos (RWTH Aachen University)

Presenter: REINARTZ, Minos (RWTH Aachen University)

Session Classification: Young Scientists Talks