

Source	Type	Correlation	Remarks
Renorm./fact. scales	R	correlated	Scale uncertainty of (N)NLO prediction, independent for $t\bar{t}H$, tHq , tHW , $t\bar{t}$, t , $V + \text{jets}$, VV
PDF+ α_S (gg)	R	correlated	PDF uncertainty for gg initiated processes, independent for $t\bar{t}H$, tHq , tHW , and others
PDF+ α_S (q \bar{q})	R	correlated	PDF uncertainty for q \bar{q} initiated processes ($t\bar{t}W, W, Z$) except tHq
PDF+ α_S (qg)	R	correlated	PDF uncertainty for qg initiated processes (single t) except tHW
Collinear gluon splitting [†]	S	correlated	Additional 100% rate uncertainty on $t\bar{t} + 2b$ component of $t\bar{t}B$ background
μ_R scale	S	correlated	Renormalisation scale uncertainty of the ME generator, independent for $t\bar{t}H$, tHq , tHW , $t\bar{t}B$ ($t\bar{t}b\bar{b}$ sample), other $t\bar{t}$ ($t\bar{t}$ sample)
μ_F scale	S	correlated	Factorisation scale uncertainty of the ME generator, independent for $t\bar{t}H$, tHq , tHW , $t\bar{t}B$ ($t\bar{t}b\bar{b}$ sample), other $t\bar{t}$ ($t\bar{t}$ sample)
PDF shape	S	correlated	From NNPDF variations, independent for tHq , tHW , $t\bar{t}B$ ($t\bar{t}b\bar{b}$ sample), other $t\bar{t}$ ($t\bar{t}$ sample) and $t\bar{t}H$
PS scale ISR [†]	S	correlated	Initial state radiation uncertainty of the PS (PYTHIA), independent for $t\bar{t}H$, $t\bar{t}B$ ($t\bar{t}b\bar{b}$ sample), other $t\bar{t}$ ($t\bar{t}$ sample)
PS scale FSR [†]	S	correlated	Final state radiation uncertainty of the PS (PYTHIA), independent for $t\bar{t}H$, $t\bar{t}B$ ($t\bar{t}b\bar{b}$ sample), other $t\bar{t}$ ($t\bar{t}$ sample)
ME-PS matching ($t\bar{t}$) [†]	R	correlated	NLO ME-PS matching (for $t\bar{t} + \text{jets}$ events), independent for $t\bar{t}B$, $t\bar{t}C$, $t\bar{t}LF$
Underlying event ($t\bar{t}$)	R	correlated	Underlying event (for all $t\bar{t} + \text{jets}$ events)
STXS migration	R	correlated	Signal, only in STXS measurement
STXS acceptance	S	correlated	Signal, only in STXS measurement
Integrated luminosity	R	partially	Signal and all backgrounds
Lepton ID/Iso (2 sources)	S	uncorrelated	Signal and all backgrounds
Trigger efficiency (4 sources)	S	uncorrelated	Signal and all backgrounds
L1 prefiring correction	S	uncorrelated	Signal and all backgrounds
Pileup	S	correlated	Signal and all backgrounds
Jet energy scale (11 sources)	S	partially	Signal, $t\bar{t} + \text{jets}$ and single t
Jet energy resolution	S	uncorrelated	Signal, $t\bar{t} + \text{jets}$ and single t
b tag bkg. contam. (2 sources)	S	partially	Signal and all backgrounds
b tag bkg. contam. stat. (4 sources)	S	uncorrelated	Signal and all backgrounds
b tag charm (2 sources)	S	partially	Signal and all backgrounds
TF _L correction	S	uncorrelated	QCD multijet background estimate
Size of the MC samples	S	uncorrelated	Statistical uncertainty of signal and background prediction due to limited sample size