

Source	Type	Remarks
Integrated luminosity	rate	Signal and all backgrounds
Lepton identification/isolation	shape	Signal and all backgrounds
Trigger efficiency	shape	Signal and all backgrounds
Pileup	shape	Signal and all backgrounds
Jet energy scale	shape	Signal and all backgrounds
Jet energy resolution	shape	Signal and all backgrounds
b tag hf fraction	shape	Signal and all backgrounds
b tag hf stats (linear)	shape	Signal and all backgrounds
b tag hf stats (quadratic)	shape	Signal and all backgrounds
b tag lf fraction	shape	Signal and all backgrounds
b tag lf stats (linear)	shape	Signal and all backgrounds
b tag lf stats (quadratic)	shape	Signal and all backgrounds
b tag charm (linear)	shape	Signal and all backgrounds
b tag charm (quadratic)	shape	Signal and all backgrounds
Renorm./fact. scales ( $t\bar{t}H$ )	rate	Scale uncertainty of NLO $t\bar{t}H$ prediction
Renorm./fact. scales ( $t\bar{t}$ )	rate	Scale uncertainty of NNLO $t\bar{t}$ prediction
Renorm./fact. scales ( $t\bar{t}+hf$ )	rate	Additional 50% rate uncertainty of $t\bar{t}+hf$ predictions
Renorm./fact. scales (t)	rate	Scale uncertainty of NLO single t prediction
Renorm./fact. scales (V)	rate	Scale uncertainty of NNLO W and Z prediction
Renorm./fact. scales (VV)	rate	Scale uncertainty of NLO diboson prediction
PDF (gg)	rate	PDF uncertainty for gg initiated processes except $t\bar{t}H$
PDF (gg $t\bar{t}H$ )	rate	PDF uncertainty for $t\bar{t}H$
PDF (q $\bar{q}$ )	rate	PDF uncertainty of q $\bar{q}$ initiated processes ( $t\bar{t}+W,W,Z$ )
PDF (qg)	rate	PDF uncertainty of qg initiated processes (single t)
$\mu_R$ scale ( $t\bar{t}$ )	shape	Renormalisation scale uncertainty of the $t\bar{t}$ ME generator (POWHEG), same for additional jet flavours
$\mu_F$ scale ( $t\bar{t}$ )	shape	Factorisation scale uncertainty of the $t\bar{t}$ ME generator (POWHEG), same for additional jet flavours
PS scale: ISR ( $t\bar{t}$ )	rate	Initial state radiation uncertainty of the PS (for $t\bar{t}$ events), jet multiplicity dependent rate uncertainty, independent for additional jet flavours
PS scale: FSR ( $t\bar{t}$ )	rate	Final state radiation uncertainty (for $t\bar{t}$ events), jet multiplicity dependent rate uncertainty, independent for additional jet flavours
ME-PS matching ( $t\bar{t}$ )	rate	NLO ME to PS matching, <i>hdamp</i> [?] (for $t\bar{t}$ events), jet multiplicity dependent rate uncertainty, independent for additional jet flavours
Underlying event ( $t\bar{t}$ )	rate	Underlying event (for $t\bar{t}$ events), jet multiplicity dependent rate uncertainty, independent for additional jet flavours
NNPDF3.0NLO ( $t\bar{t}H$ , $t\bar{t}$ )	shape	Based on the NNPDF replicas, same for $t\bar{t}H$ and additional jet flavours
Bin-by-bin event count	shape	Statistical uncertainty of the signal and background prediction due to the limited sample size