

Source	Uncertainty (2016/2017/2018)	Signal	Background	Correlated
Normalization only				
Luminosity 2016–2018	0.35/0.61/0.84%	Yes	All	Partial
Luminosity 2016–2017	0.04/0.55/–%	Yes	All	Partial
Luminosity 2016	1.18/–/–%	Yes	All	Partial
Electron identification	1.5%	Yes	All	Yes
Electron isolation	2.5%	Yes	All	Yes
Electron trigger	5%	Yes	All	Yes
Muon identification	1%	Yes	All	Yes
Muon isolation	2.5%	Yes	All	Yes
Muon trigger	5%	Yes	All	Yes
Cross section $t\bar{t} + b\bar{b}$	+10%/–10%	No	$t\bar{t} + b\bar{b}$	Yes
Cross section $t\bar{t} + \text{non-}b\bar{b}$	+10%/–10%	No	$t\bar{t} + \text{non-}b\bar{b}$	Yes
$t\bar{t}H$ cross section [29]	20%	No	$t\bar{t}H$	Yes
Single t cross section [49,50]	4%	No	single t	Yes
Electroweak cross section [51]	3.8%	No	EW	Yes
hdamp	$\pm\sigma$	No	$t\bar{t}$	Yes
Shape and normalization				
Prefire	$\pm\sigma$	Yes	All	No
Pileup	$\sigma_{\text{minbias}} \pm 4.6\%$	Yes	All	Yes
Jet pileup	$\pm\sigma(p_T)$	Yes	All	Yes
Jet energy scale	$\pm\sigma(p_T, \eta)$	Yes	All	No
Jet energy resolution	$\pm\sigma(\eta)$	Yes	All	No
Top quark tagging	$\pm\sigma(\eta)$	Yes	All	No
W boson tagging	$\pm\sigma(\eta)$	Yes	All	No
DEEPIET correlated	$\pm\sigma(p_T)$	Yes	All	Partial
Top quark p_T reweighting	$\pm\sigma(p_T)$	No	$t\bar{t}$	Yes
PDF	$\pm\sigma$	Shape	All	Yes
ISR	$\pm\sigma$	Yes	All	Yes
FSR	$\pm\sigma$	Yes	All	Yes
μ_F	$\pm\sigma$	Shape	All	Yes
μ_R	$\pm\sigma$	Shape	All	Yes
MC statistical		Yes	All	No