

## Normalization uncertainties (%)

Uncertainty	Dileptonic $t\bar{t}(ee) + p_T^{\text{miss}}$	Dileptonic $t\bar{t}(e\mu) + p_T^{\text{miss}}$	Dileptonic $t\bar{t}(\mu\mu) + p_T^{\text{miss}}$	$\ell + \text{jets}$ $t\bar{t}(e, \mu) + p_T^{\text{miss}}$	All-hadronic $t\bar{t}(0, 1\text{RTT}) + p_T^{\text{miss}}$	All-hadronic $t\bar{t}(2\text{RTT}) + p_T^{\text{miss}}$	1 b tag $b\bar{b} + p_T^{\text{miss}}$	2 b tag $b\bar{b} + p_T^{\text{miss}}$
Integrated luminosity	2.7			2.7	2.7		2.7	
Pileup	0.2			1.4	0.4		0.6	
W/Z + jets heavy flavor fraction	—			20	20		—	
Drell–Yan bkg. normalization	64	—	43	—	—		—	
Single t bkg. normalization	20			20	20		15	
Multijet bkg. normalization	—			—	100		50	
Misid. lepton normalization	200	30	48	—	—		—	
RTT efficiency	—			—	4		—	
b tagging efficiency	2.2			2.9	7.5	2.3	12	
Lepton efficiency	4			2	—		—	
$p_T^{\text{miss}}$ trigger efficiency	—			—	2		0.3	
Lepton trigger efficiency	1			2	—		—	

## Shape uncertainties (%)

Uncertainty	Dileptonic $t\bar{t}(ee) + p_T^{\text{miss}}$	Dileptonic $t\bar{t}(e\mu) + p_T^{\text{miss}}$	Dileptonic $t\bar{t}(\mu\mu) + p_T^{\text{miss}}$	$\ell + \text{jets}$ $t\bar{t}(e, \mu) + p_T^{\text{miss}}$	All-hadronic $t\bar{t}(0, 1\text{RTT}) + p_T^{\text{miss}}$	All-hadronic $t\bar{t}(2\text{RTT}) + p_T^{\text{miss}}$	1 b tag $b\bar{b} + p_T^{\text{miss}}$	2 b tag $b\bar{b} + p_T^{\text{miss}}$
PDFs	1.6 – 2.2			1.8 – 2.9	1.6 – 4.9	1.9 – 3.4	1.0 – 2.0	0.2 – 0.8
Jet energy scale	0.6 – 14			13 – 21	10 – 75	11 – 24	1.3 – 2.6	
Top quark $p_T$ reweighting	0.9 – 17			10 – 12	13 – 23	15 – 18	—	
Diboson $\mu_R, \mu_F$	4.1 – 12			12 – 15	10 – 18	3.2 – 23	15 – 15	
$t\bar{t} + Z/W\gamma \mu_R, \mu_F$	11 – 25			14 – 26	11 – 25	10 – 15	—	
$t\bar{t} \mu_R, \mu_F$	13 – 23			19 – 38	13 – 25	22 – 37	—	
W/Z + jets $\mu_R$	—			7.8 – 8.8	6.9 – 10		4.4 – 5.6	
W/Z + jets $\mu_F$	—			1.4 – 2.6	0.2 – 3.5		2.8 – 11	
W/Z + jets EWK correction	—			14 – 20	4.2 – 14		4.8 – 21	