

Systematic uncertainty	Magnitude (%)	Category A		Category B			
		B (%)	S (%)	$\mu\tau_h$ ch.	e $\tau_h$ ch.		
		B (%)	S (%)	B (%)	S (%)	B (%)	S (%)
Integrated luminosity	2.6	0.4/1.2	2.6	2.6	2.6	2.6	2.6
Electron reco/ID/iso & trigger	$p_T, \eta$ dependent	—	—	—	—	1.4	2.2
Muon reco/ID/iso & trigger	1.1	0.1/0.5	1.1	0.9	0.9	—	—
$\tau$ lepton reco/ID/iso	6.0	0.8/2.8	6.0	1.5	3.0	0.6	3.1
Muon momentum scale & resolution	$p_T$ dependent	0.1/0.3	0.4	—	—	—	—
$\tau$ lepton energy scale	3.0	1.2/4.1	2.0	2.3	2.7	0.6	1.5
$\tau$ lepton energy resolution	10.0	0.2/0.8	0.9	1.2	1.3	0.2	0.1
Jet energy scale	$p_T, \eta$ dependent	0.9/3.2	1.9	4.2	1.9	5.6	2.7
Jet energy resolution	$\eta$ dependent	0.4/1.2	1.0	0.8	0.3	1.6	0.8
Pileup	5.0	0.1/1.2	1.0/2.5	0.8	0.3	0.9	0.5
PDF (on acceptance)	—	—	+2.9/ <sup>+2.4</sup> <sub>-4.3/-6.2</sub>	—	0.7	—	0.9
PDF (on background)	—	—	—	8.7	—	8.3	—
Matrix method	—	23.1/15.3	—	—	—	—	—
Jet $\rightarrow \tau$ misidentification rate	$p_T$ dependent	—	—	8.2	1.0	10.9	0.8
e $\rightarrow \tau$ misidentification rate	$\eta$ dependent	—	—	0.1	0.1	0.1	0.1
t $\bar{t}$ factorization/renormalization	$\begin{array}{c} +100 \\ -50 \end{array}$	—	—	+6.1	—	+2.9	—
Top quark $p_T$ re-weighting	$p_T$ dependent	—	—	—	—	—	—
W+jets factorization/renormalization	$\begin{array}{c} +100 \\ -50 \end{array}$	—	—	4.3	—	0.3	—
W+jets matching threshold	$\begin{array}{c} +100 \\ -50 \end{array}$	—	—	1.3	—	2.5	—