

Systematic uncertainty	$H \rightarrow \mu\tau_e$	$H \rightarrow \mu\tau_h$	$H \rightarrow e\tau_\mu$	$H \rightarrow e\tau_h$
Muon trigger/ID/isolation	2%	2%	2%	-
Electron trigger/ID/isolation	2%	-	2%	2%
Hadronic $\tau$ efficiency	-	5%	-	5%
b-tagging veto	2.0–4.5%	2.0–4.5%	2.0–4.5%	-
$Z \rightarrow \mu\mu/ee$ +jets background	10% $\oplus$ 5%	-	10% $\oplus$ 5%	-
$Z \rightarrow \tau\tau$ +jets background	10% $\oplus$ 5%	10% $\oplus$ 5%	10% $\oplus$ 5%	10% $\oplus$ 5%
W + jets background	10%	-	10%	-
QCD multijet background	30%	-	30%	-
WW, ZZ background	5% $\oplus$ 5%	5% $\oplus$ 5%	5% $\oplus$ 5%	5% $\oplus$ 5%
$t\bar{t}$ background	10% $\oplus$ 5%	10% $\oplus$ 5%	10% $\oplus$ 5%	10% $\oplus$ 5%
W + $\gamma$ background	10% $\oplus$ 5%	-	10% $\oplus$ 5%	-
Single top production background	5% $\oplus$ 5%	5% $\oplus$ 5%	5% $\oplus$ 5%	5% $\oplus$ 5%
$\mu \rightarrow \tau_h$ background	-	25%	-	-
$e \rightarrow \tau_h$ background	-	-	-	12%
jet $\rightarrow \tau_h, \mu, e$ background	-	30% $\oplus$ 10%	-	30% $\oplus$ 10%
Jet energy scale	3–20%	3–20%	3-20%	3–20%
Hadronic $\tau$ energy scale	-	1.2%	-	1.2%
$e \rightarrow \tau_h$ energy scale	-	1.5%	-	3%
Electron energy scale	$\pm\sigma$	-	$\pm\sigma$	$\pm\sigma$
Muon energy scale	0.2%	0.2%	-	$\pm\sigma$
Unclustered energy scale	$\pm\sigma$	$\pm\sigma$	$\pm\sigma$	$\pm\sigma$
acceptance scale (GF H)	-3.0 – 2.0%	-3.0 – 2.0%	-3.0 – 2.0%	-3.0 – 2.0%
acceptance scale (VBF H)	-0.3 – 1.0%	-0.3 – 1.0%	-0.3 – 1.0%	-0.3 – 1.0%
QCD scale YR4 (GF H)	3.2%	3.2%	3.2%	3.2%
QCD scale YR4 (VBF H)	2.1%	2.1%	2.1%	2.1%
acceptance PDF (GF H)	-1.5 – 0.5%	-1.5 – 0.5%	-1.5 – 0.5%	-1.5 – 0.5%
acceptance PDF (VBF H)	-1.5 – 1.0%	-1.5 – 1.0%	-1.5 – 1.0%	-1.5 – 1.0%
PDF YR4 (GF H)	3.9%	3.9%	3.9%	3.9%
PDF YR4 (VBF H)	0.4%	0.4%	0.4%	0.4%
Bin-by-bin	Shape	Shape	Shape	Shape
Luminosity	2.5%	2.5%	2.5%	2.5%
Pile-up	Shape	Shape	Shape	Shape