

Uncertainty	Magnitude	Correlation	Shape
Muon reconstruction	1%	Yes	No
Electron reconstruction	2%	Yes	No
Muon trigger	2%	No	No
Electron trigger	2%	No	No
$e \rightarrow \tau_h$ rate in $\tau_h \tau_h$	10 (2)% 2016 (2017,2018)	No	No
$e \rightarrow \tau_h$ rate in $\tau_e \tau_h$	10%	No	No
$\mu \rightarrow \tau_h$ rate in $\tau_\mu \tau_h$	up to 40%	No	No
b-jet veto	1–9%	No	No
Luminosity	2.3–2.5%	Partial	No
Embedded yield	4%	No	No
$t\bar{t}$ cross section	4.2%	Yes	No
Diboson cross section	5%	Yes	No
Single top quark cross section	5%	Yes	No
W + jets cross section	4%	Yes	No
Drell–Yan cross section	2%	Yes	No
H cross sections	2–5% [?]	Yes	No
H $\rightarrow \tau\tau$ branching fraction	2% [?]	Yes	No
SV reco. eff. in $a_1^{3pr} a_1^{3pr}$	2%	No	No
τ_h ID efficiency	3%	No	No
S_{IP} In μ, π , and edecays	Decay-mode dependent, 1–5%	No	No
Muon energy scale	0.4–2.7%	Yes	Yes
Electron energy scale	<1%	Yes	Yes
τ_h Trigger	p_T /Decay-mode dependent	No	Yes
τ_h Reconstruction	p_T /Decay-mode dependent (2–3%)	Partial	Yes
Top quark p_T reweighing	p_T^{top} -Dependent	Yes	Yes
Z p_T and mass reweighing	p_T^Z/m_Z -Dependent	Partial	Yes
τ_h Energy scale	p_T /Decay-mode dependent (0.2–1.1%)	No	Yes
$e \rightarrow \tau_h$ Energy scale	0.5–6.5%	No	Yes
$\mu \rightarrow \tau_h$ Energy scale	1%	No	Yes
Jet energy scale	Event-dependent	Partial	Yes
Jet energy resolution	Event-dependent	No	Yes
p_T^{miss} Unclustered scale	Event-dependent	No	Yes
p_T^{miss} Recoil corrections	Event-dependent	No	Yes
F_F uncertainties	Described in text	Partial	Yes
$t\bar{t}$ /diboson in embedded	10%	Yes	Yes
L1 trigger timing (2016–2017)	Event-dependent (0–4%)	Yes	Yes
Renorm./Fact. scales	Event-dependent	Yes	Yes
Parton showering	Event-dependent	Yes	Yes