

Source of uncertainty	Magnitude	Process
$\tau_h$ id. & isolation	5%	All simulations
$\tau_h$ energy scale <sup>†</sup> (1.2% energy shift)	<2%	All simulations
e id. & isolation	2%	All simulations
e trigger	2%	All simulations
$\mu$ id. & isolation	2%	All simulations
$\mu$ trigger	2%	All simulations
b jet veto	4.5% heavy flavor, 0.15% light flavor	All simulations
qq $\rightarrow$ ZZ theoretical uncertainty	4.8%	qq $\rightarrow$ ZZ
gg $\rightarrow$ ZZ NLO K factor	10%	gg $\rightarrow$ ZZ
t $\bar{t}$ Z theoretical uncertainty	25%	t $\bar{t}$ Z
t $\bar{t}$ W theoretical uncertainty	25%	t $\bar{t}$ W
triboson theoretical uncertainty	25%	triboson
Theoretical uncertainty on $\mathcal{B}(h \rightarrow \tau\tau)$	<2%	Signal, Zh, and Wh
Reducible background uncertainties:		Reducible background
e prompt lepton subtraction	<12% in $ll + e\mu$ , <1% in $ll + e\tau_h$	
$\mu$ prompt lepton subtraction	<16% in $ll + e\mu$ , <1.5% in $ll + \mu\tau_h$	
$\tau$ prompt lepton subtraction	<3.5% in $ll + e\tau_h$ and $ll + \mu\tau_h$ , <1% in $ll + \tau_h\tau_h$	
normalization	40% in $ll + e\tau_h$ , $ll + \mu\tau_h$ , $ll + \tau_h\tau_h$ , and $ll + e\mu$	
$\vec{p}_T^{\text{miss}}$ energy scale <sup>†</sup>	<2%	All simulations
Limited number of events	Statistical uncertainty in individual bins	All background processes
Integrated luminosity	2.5%	All simulations