

Uncertainty category	Type	Effect on yield	Effect on shape
----------------------	------	-----------------	-----------------

Experimental uncertainties

Trigger efficiency	shape	0.5%	0.2%
Lepton ident./isolation	shape	3.0%	0.2%
b tagging (heavy)	shape	0.6%	0.1%
b tagging (light)	shape	0.3%	0.2%
Kinematic reconstruction	shape	0.3%	0.1%
JES: Absolute	shape	0.9%	0.3%
JES: Absolute (stat)	shape	0.4%	0.2%
JES: Pileup	shape	0.5%	0.2%
JES: Flavor QCD	shape	0.7%	0.2%
JES: Relative balance	shape	0.4%	0.8%
JER	shape	0.3%	0.3%
Unclustered energy	shape	0.2%	0.3%
Pileup	shape	0.4%	0.1%
$t\bar{t}$ normalization	norm.	4.4%	0.3%
Z+jets normalization	norm.	1.6%	0.4%
Z+jets shape	shape	0.2%	0.2%
Luminosity	norm.	1.2%	<0.1%

Model uncertainties

Matrix-elem. renorm. scale variation	shape	0.4%	0.3%
Matrix-elem. fact. scale variation	shape	0.6%	0.2%
Parton shower: Initial-state radiation	shape	0.8%	0.7%
Parton shower: Final-state radiation	shape	2.1%	0.4%
Top quark mass	shape	2.4%	0.5%
ME/parton shower matching	norm.	0.8%	<0.1%
Underlying event	norm.	0.8%	<0.1%
PDF	shape	0.9%	0.1%
Color reconnection	norm.	0.8%	<0.1%
b quark fragmentation	shape	0.7%	0.4%
B hadron semilept. decays	shape	0.3%	0.2%
Branching fraction	norm.	1.9%	<0.1%
NNLO QCD reweighting	shape	0.6%	0.4%
EWK corrections	shape	0.6%	0.4%
η_t normalization	norm.	0.7%	0.8%
η_t binding energy	shape	0.2%	0.1%