

Systematic uncertainty source	Correlation 2016–2017	Correlation time bins	Magnitude
Flat luminosity, year-to-year correlated part	100%	100%	0.6–0.9%
Flat luminosity, year-to-year uncorrelated part	0%	100%	0.9–1.4%
Time-dependent luminosity stability	0%	100%	0.2–0.4%
Time-dependent luminosity linearity	0%	100%	0.2–0.4%
Time-dependent pileup reweighting	100%	100%	0.3–5%
Time-dependent trigger efficiency, syst. component	0%	100%	0.5–1%
Time-dependent trigger efficiency, stat. component	0%	0%	0.5%
L1 ECAL timing shift	100%	0%	0.5%
Electron reconstruction	100%	0%	0.4%
Electron identification	100%	0%	1.2–2.2%
Muon identification, syst. component	100%	0%	0.3%
Muon identification, stat. component	0%	0%	0.5%
Muon isolation, syst. component	100%	0%	<0.1%
Muon isolation, stat. component	0%	0%	0.2%
Phase-space extrapolation of lepton isolation	100%	100%	0.5–1%
Jet energy scale, year-to-year correlated part	100%	0%	0.8%
Jet energy scale, year-to-year uncorrelated part	0%	0%	1.4%
Parton flavor impact on jet energy scale	100%	100%	1.1%
b tagging	0%	0%	2–4%
Matrix element scale <sup>†</sup>	100%	100%	0.3–6%
PDF+ $\alpha_S$ <sup>†</sup>	100%	100%	0.1–0.4%
Initial- & final-state radiation scale <sup>†</sup>	100%	100%	1–5%
Top quark $p_T$ <sup>†</sup>	100%	100%	0.5–2.5%
Matrix element to parton shower matching <sup>†</sup>	100%	100%	0.7%
Underlying event tune <sup>†</sup>	100%	100%	0.2%
Color reconnection <sup>†</sup>	100%	100%	0.3%
Top quark mass <sup>†</sup>	100%	100%	0.5–3%
Single top quark cross section <sup>†</sup>	100%	100%	30%
$t\bar{t}V$ cross section <sup>†</sup>	100%	100%	20%
Diboson cross section <sup>†</sup>	100%	100%	30%
V+jets cross section <sup>†</sup>	100%	100%	30%
$t\bar{t}$ cross section <sup>*†</sup>	100%	100%	4%
Single top quark time modulation <sup>*</sup>	100%	100%	2%
MC statistical uncertainty	0%	100%	0.1–1%