arXiv:2009.07123

CMS *Supplementary*

$\widehat{Y}_t = 1.16^{+0.24}_{-0.35}$

#	Systematic
1	Final state radiation scale (correlated)
2	Electroweak correction uncertainty
3	ME factorization scale
4	Jet energy *FlavorQCD*
5	Initial state radiation scale (correlated)
6	Final state radiation scale (2016)
7	ME renormalization scale
8	Top quark mass
9	Muon reconstruction efficiency (correlated)
10	Single top normalization
11	NNPDF variation 2 (2016)
12	b tagging miss-ID efficiency (correlated)
13	Jet energy *RelativeFSR* (correlated)
14	Jet energy *TimePtEta* (2016)
15	NNPDF variation 4 (correlated)
16	NNPDF α_s variation (correlated)
17	NNPDF variation 1 (correlated)
18	Muon reconstruction efficiency (2018)
19	b tagging efficiency (correlated)
20	b tagging efficiency (2018)
21	NNPDF variation 0 (correlated)
22	Jet energy *SinglePionECAL*
23	Jet energy resolution (2018)
24	Jet energy *RelativeSample* (2016)
25	Jet energy *AbsoluteMPFBias*
26	Jet energy *TimePtEta* (2018)
27	Jet energy *RelativeFSR* (2018)
28	t$\bar{\text{t}}$ normalization
29	Drell−Yan normalization
30	Jet energy *RelativeBal* (2016)

● Pull

■ +1σ Impact   ■ -1σ Impact

┼ +1σ Impact   ┼ -1σ Impact (expected)

$(\hat{\theta}-\theta_0)/\Delta\theta$

$\Delta\widehat{Y}_t$

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31	Pileup		
32	Jet energy *AbsoluteScale*		
33	prefire (2017)		
34	NNPDF variation 1 (2016)		
35	Jet energy *Fragmentation*		
36	b fragmentation		
37	Jet energy *PileupPtBB* (2018)		
38	Jet energy *PileupDataMC* (correlated)		
39	Jet energy *RelativeFSR* (2016)		
40	Muon reconstruction efficiency (2016)		
41	lumi (2016)		
42	Jet energy *PileupDataMC* (2016)		
43	b tagging efficiency (2017)		
44	b tagging miss-ID efficiency (2017)		
45	Jet energy *RelativeBal* (correlated)		
46	Jet energy *PileupPtBB* (2016)		
47	b decay		
48	Jet energy *RelativePtEC1* (2017)		
49	lumi (2018)		
50	NNPDF variation 2 (correlated)		
51	vv_norm		
52	b tagging miss-ID efficiency (2016)		
53	Jet energy *RelativeJEREC1* (2016)		
54	Electron reconstuction efficiency (2018)		
55	Jet energy *PileupDataMC* (2018)		
56	Jet energy *RelativeBal* (2018)		
57	rsfs		
58	Muon reconstruction efficiency (2017)		
59	NNPDF variation 0 (2016)		
60	lumi (2017)		

● Pull

■ +1σ Impact   ■ -1σ Impact

┼ +1σ Impact   ┼ -1σ Impact (expected)

$(\hat{\theta}-\theta_0)/\Delta\theta$

$\Delta\widehat{Y}_t$

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	Nuisance parameter
61	Jet energy *PileupDataMC* (2017)
62	Jet energy *RelativeSample* (2017)
63	b tagging efficiency (2016)
64	Electron trigger efficiency (2018)
65	Jet energy *PileupPtEC1* (correlated)
66	Jet energy *PileupPtBB* (correlated)
67	Jet energy *RelativeFSR* (2017)
68	Electron reconstuction efficiency (correlated)
69	Jet energy *PileupPtEC1* (2018)
70	prefire (2016)
71	Jet energy *TimePtEta* (2017)
72	Muon Trigger Efficiency (2018)
73	Jet energy *PileupPtRef* (correlated)
74	Muon Trigger Efficiency (2017)
75	Jet energy resolution (2017)
76	NNPDF variation 3 (correlated)
77	Jet energy resolution (2016)
78	Jet energy *AbsoluteStat* (2018)
79	Jet energy *PileupPtRef* (2017)
80	flat (2016)
81	Electron trigger efficiency (2017)
82	flat (correlated)
83	Jet energy *PileupPtBB* (2017)
84	Electron reconstuction efficiency (2017)
85	Initial state radiation scale (2016)
86	Jet energy *SinglePionHCAL*
87	flat (2017)
88	Jet energy *PileupPtRef* (2016)
89	Jet energy *PileupPtEC1* (2017)
90	NNPDF variation 4 (2016)

Legend:
● Pull
+1σ Impact   −1σ Impact
+1σ Impact   −1σ Impact (expected)

$(\hat{\theta}-\theta_0)/\Delta\theta$

$\Delta\widehat{Y}_t$

CMS *Supplementary*

$\widehat{Y}_t = 1.16^{+0.24}_{-0.35}$

Unconstrained		Gaussian
Poisson		AsymmetricGaussian

91	Jet energy *AbsoluteStat* (2016)
92	Electron reconstuction efficiency (2016)
93	Electron trigger efficiency (2016)
94	Muon Trigger Efficiency (2016)
95	Jet energy *PileupPtRef* (2018)
96	NNPDF variation 5 (2016)
97	Jet energy *RelativeBal* (2017)
98	NNPDF α_s variation (2016)
99	lumi (correlated)
100	Jet energy *RelativePtBB* (2016)
101	Jet energy *RelativePtBB* (correlated)
102	flat (2018)
103	

1.0^{+0}_{-0}

$(\hat{\theta}-\theta_0)/\Delta\theta$

$\Delta\widehat{Y}_t$

● Pull
+1σ Impact
-1σ Impact
+1σ Impact
-1σ Impact (expected)