$\widehat{Y}_t = 1.16^{+0.24}_{-0.35}$ arXiv:2009.07123 **CMS** Supplementary Final state radiation scale (correlated) 1 Electroweak correction uncertainty 2 3 ME factorization scale Jet energy FlavorOCD Initial state radiation scale (correlated) 5 Final state radiation scale (2016) 6 7 ME renormalization scale Top quark mass 8 Muon reconstruction efficiency (correlated) 9 Single top normalization 10 NNPDF variation 2 (2016) 11 b tagging miss-ID efficiency (correlated) 12 Jet energy *RelativeFSR* (correlated) 13 Jet energy TimePtEta (2016) 14 15 NNPDF variation 4 (correlated) NNPDF  $\alpha_s$  variation (correlated) 16 NNPDF variation 1 (correlated) 17 Muon reconstruction efficiency (2018) 18 b tagging efficiency (correlated) 19 b tagging efficiency (2018) 20 NNPDF variation 0 (correlated) 21 Jet energy SinglePionECAL 22 Jet energy resolution (2018) 23 24 Jet energy RelativeSample (2016) 25 Jet energy AbsoluteMPFBias Jet energy TimePtEta (2018) 26 Jet energy RelativeFSR (2018) 27 28 tt normalization Drell-Yan normalization 29 30 Jet energy RelativeBal (2016) -0.10 0.1  $(\hat{\theta} - \theta_0)/\Delta\theta$ ◆Pull +1σ Impact -1σ Impact +1σ Impact — -1σ Impact (expected)

 $\widehat{Y}_t = 1.16^{+0.24}_{-0.35}$ arXiv:2009.07123 **CMS** Supplementary Pileup 31 Jet energy AbsoluteScale 32 prefire (2017) 33 NNPDF variation 1 (2016) 34 35 Jet energy Fragmentation b fragmentation 36 Jet energy PileupPtBB (2018) 37 Jet energy *PileupDataMC* (correlated) 38 Jet energy RelativeFSR (2016) 39 Muon reconstruction efficiency (2016) 40 lumi (2016) 41 Jet energy PileupDataMC (2016) 42 b tagging efficiency (2017) 43 b tagging miss-ID efficiency (2017) 44 45 Jet energy RelativeBal (correlated) Jet energy PileupPtBB (2016) 46 47 b decay Jet energy RelativePtEC1 (2017) 48 lumi (2018) 49 50 NNPDF variation 2 (correlated) 51 vv norm b tagging miss-ID efficiency (2016) 52 Jet energy RelativeJEREC1 (2016) 53 Electron reconstuction efficiency (2018) 54 55 Jet energy PileupDataMC (2018) Jet energy RelativeBal (2018) 56 57 Muon reconstruction efficiency (2017) 58 NNPDF variation 0 (2016) 59 lumi (2017) 60 -0.010.01 0  $(\hat{\theta} - \theta_0)/\Delta\theta$ ◆Pull +1σ Impact -1σ Impact +1σ Impact — -1σ Impact (expected)



