$\widehat{Y}_t = 1.16^{+0.24}_{-0.35}$ 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 NNPDF  $\alpha_{s}$  variation (2017) 23 Jet energy resolution (2018) 24 25 Jet energy RelativeSample (2016) Jet energy AbsoluteMPFBias 26 Jet energy TimePtEta (2018) 27 Jet energy RelativeFSR (2018) 28 29 tt normalization Drell-Yan normalization 30 -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 Jet energy RelativeBal (2016) 31 Pileup 32 Jet energy AbsoluteScale 33 prefire (2017) 34 35 NNPDF variation 1 (2016) Jet energy Fragmentation 36 b fragmentation 37 Jet energy PileupPtBB (2018) 38 Jet energy *PileupDataMC* (correlated) 39 40 Jet energy RelativeFSR (2016) Muon reconstruction efficiency (2016) 41 42 lumi (2016) Jet energy *PileupDataMC* (2016) 43 b tagging efficiency (2017) 44 45 b tagging miss-ID efficiency (2017) 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 55 Electron reconstuction efficiency (2018) Jet energy PileupDataMC (2018) 56 Jet energy RelativeBal (2018) 57 58 rsfs Muon reconstruction efficiency (2017) 59 NNPDF variation 0 (2016) 60 -0.010.01 0  $(\hat{\theta} - \theta_0)/\Delta\theta$ **←** Pull +1σ Impact -1σ Impact +1σ Impact — -1σ Impact (expected)



