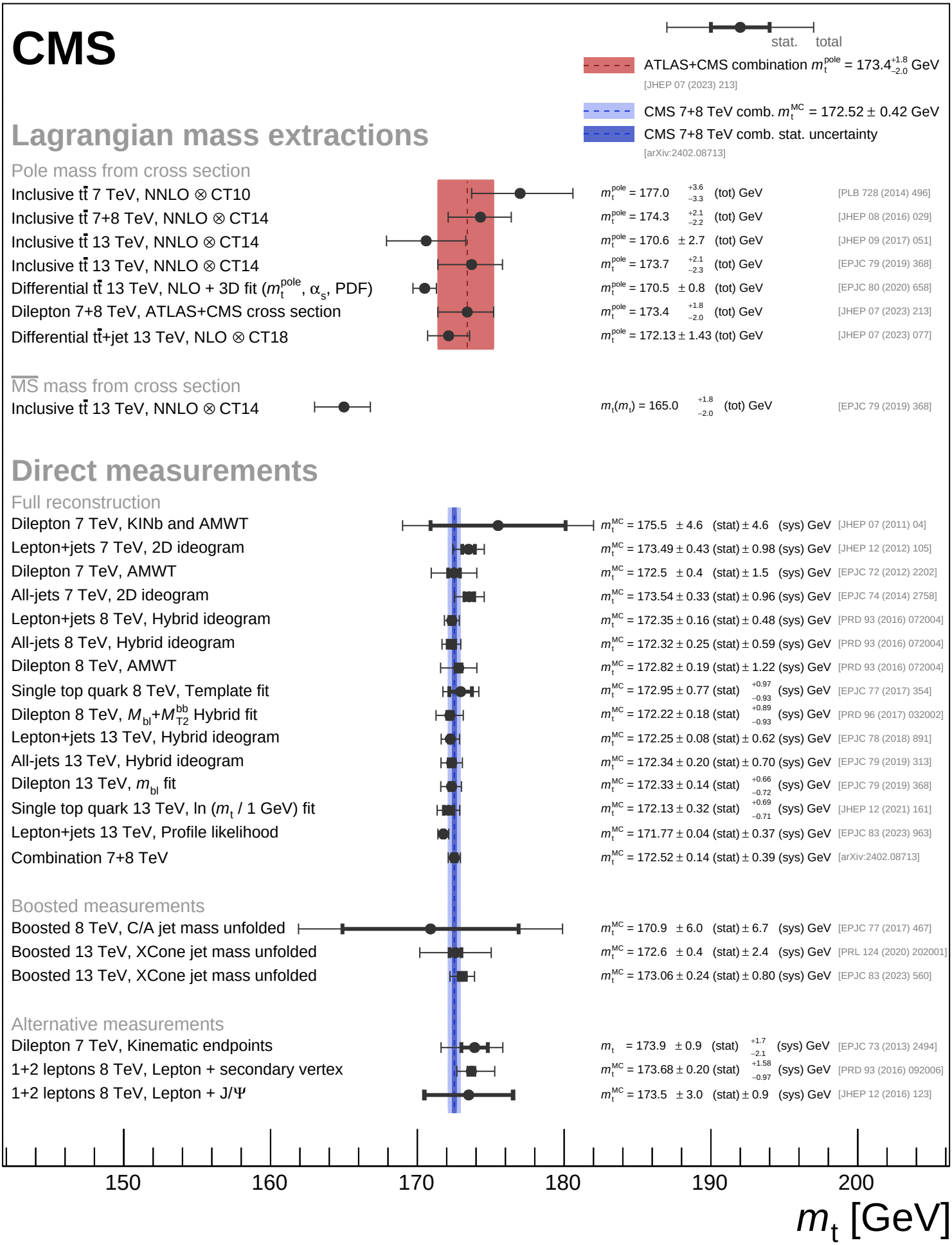
CMS


stat.
total
ATLAS+CMS combination m_t^{pole} = 173.4 $^{+1.8}_{-2.0}$ GeV
[JHEP 07 (2023) 213]
CMS 7+8 TeV comb. m_t^{MC} = 172.52 ± 0.42 GeV
CMS 7+8 TeV comb. stat. uncertainty
[arXiv:2402.08713]
Lagrangian mass extractions
Pole mass from cross section
Inclusive tt̄ 7 TeV, NNLO ⊗ CT10
m_t^{pole} = 177.0 $^{+3.6}_{-3.3}$ (tot) GeV [PLB 728 (2014) 496]
Inclusive tt̄ 7+8 TeV, NNLO ⊗ CT14
m_t^{pole} = 174.3 $^{+2.1}_{-2.2}$ (tot) GeV [JHEP 08 (2016) 029]
Inclusive tt̄ 13 TeV, NNLO ⊗ CT14
m_t^{pole} = 170.6 ± 2.7 (tot) GeV [JHEP 09 (2017) 051]
Inclusive tt̄ 13 TeV, NNLO ⊗ CT14
m_t^{pole} = 173.7 $^{+2.1}_{-2.3}$ (tot) GeV [EPJC 79 (2019) 368]
Differential tt̄ 13 TeV, NLO + 3D fit (m_t^{pole}, α_s, PDF)
m_t^{pole} = 170.5 ± 0.8 (tot) GeV [EPJC 80 (2020) 658]
Dilepton 7+8 TeV, ATLAS+CMS cross section
m_t^{pole} = 173.4 $^{+1.8}_{-2.0}$ (tot) GeV [JHEP 07 (2023) 213]
Differential tt̄+jet 13 TeV, NLO ⊗ CT18
m_t^{pole} = 172.13 ± 1.43 (tot) GeV [JHEP 07 (2023) 077]
$\overline{MS}$ mass from cross section
Inclusive tt̄ 13 TeV, NNLO ⊗ CT14
$m_t(m_t)$ = 165.0 $^{+1.8}_{-2.0}$ (tot) GeV [EPJC 79 (2019) 368]
Direct measurements
Full reconstruction
Dilepton 7 TeV, KINb and AMWT
m_t^{MC} = 175.5 ± 4.6 (stat) ± 4.6 (sys) GeV [JHEP 07 (2011) 04]
Lepton+jets 7 TeV, 2D ideogram
m_t^{MC} = 173.49 ± 0.43 (stat) ± 0.98 (sys) GeV [JHEP 12 (2012) 105]
Dilepton 7 TeV, AMWT
m_t^{MC} = 172.5 ± 0.4 (stat) ± 1.5 (sys) GeV [EPJC 72 (2012) 2202]
All-jets 7 TeV, 2D ideogram
m_t^{MC} = 173.54 ± 0.33 (stat) ± 0.96 (sys) GeV [EPJC 74 (2014) 2758]
Lepton+jets 8 TeV, Hybrid ideogram
m_t^{MC} = 172.35 ± 0.16 (stat) ± 0.48 (sys) GeV [PRD 93 (2016) 072004]
All-jets 8 TeV, Hybrid ideogram
m_t^{MC} = 172.32 ± 0.25 (stat) ± 0.59 (sys) GeV [PRD 93 (2016) 072004]
Dilepton 8 TeV, AMWT
m_t^{MC} = 172.82 ± 0.19 (stat) ± 1.22 (sys) GeV [PRD 93 (2016) 072004]
Single top quark 8 TeV, Template fit
m_t^{MC} = 172.95 ± 0.77 (stat) $^{+0.97}_{-0.93}$ (sys) GeV [EPJC 77 (2017) 354]
Dilepton 8 TeV, M_{bl}+M_{T2}^{bb} Hybrid fit
m_t^{MC} = 172.22 ± 0.18 (stat) $^{+0.89}_{-0.93}$ (sys) GeV [PRD 96 (2017) 032002]
Lepton+jets 13 TeV, Hybrid ideogram
m_t^{MC} = 172.25 ± 0.08 (stat) ± 0.62 (sys) GeV [EPJC 78 (2018) 891]
All-jets 13 TeV, Hybrid ideogram
m_t^{MC} = 172.34 ± 0.20 (stat) ± 0.70 (sys) GeV [EPJC 79 (2019) 313]
Dilepton 13 TeV, m_{bl} fit
m_t^{MC} = 172.33 ± 0.14 (stat) $^{+0.66}_{-0.72}$ (sys) GeV [EPJC 79 (2019) 368]
Single top quark 13 TeV, ln (m_t / 1 GeV) fit
m_t^{MC} = 172.13 ± 0.32 (stat) $^{+0.69}_{-0.71}$ (sys) GeV [JHEP 12 (2021) 161]
Lepton+jets 13 TeV, Profile likelihood
m_t^{MC} = 171.77 ± 0.04 (stat) ± 0.37 (sys) GeV [EPJC 83 (2023) 963]
Combination 7+8 TeV
m_t^{MC} = 172.52 ± 0.14 (stat) ± 0.39 (sys) GeV [arXiv:2402.08713]
Boosted measurements
Boosted 8 TeV, C/A jet mass unfolded
m_t^{MC} = 170.9 ± 6.0 (stat) ± 6.7 (sys) GeV [EPJC 77 (2017) 467]
Boosted 13 TeV, XCone jet mass unfolded
m_t^{MC} = 172.6 ± 0.4 (stat) ± 2.4 (sys) GeV [PRL 124 (2020) 202001]
Boosted 13 TeV, XCone jet mass unfolded
m_t^{MC} = 173.06 ± 0.24 (stat) ± 0.80 (sys) GeV [EPJC 83 (2023) 560]
Alternative measurements
Dilepton 7 TeV, Kinematic endpoints
m_t = 173.9 ± 0.9 (stat) $^{+1.7}_{-2.1}$ (sys) GeV [EPJC 73 (2013) 2494]
1+2 leptons 8 TeV, Lepton + secondary vertex
m_t^{MC} = 173.68 ± 0.20 (stat) $^{+1.58}_{-0.97}$ (sys) GeV [PRD 93 (2016) 092006]
1+2 leptons 8 TeV, Lepton + J/Ψ
m_t^{MC} = 173.5 ± 3.0 (stat) ± 0.9 (sys) GeV [JHEP 12 (2016) 123]
150
160
170
180
190
200
m_t [GeV]