

# CMS Preliminary

$\sigma_{t\bar{t}}$  summary,  $\sqrt{s} = 5.02$  TeV March 2024

NNLO+NNLL PRL 110 (2013) 252004  
 $m_{\text{top}} = 172.5$  GeV,  $\alpha_s(M_Z) = 0.118 \pm 0.001$   
 scale uncertainty  
 scale  $\oplus$  PDF  $\oplus$   $\alpha_s$  uncertainty

total stat

$\sigma_{t\bar{t}} \pm (\text{stat}) \pm (\text{syst}) \pm (\text{lumi})$

**CMS, e+jets**  
 CMS-PAS-TOP-23-005,  $L_{\text{int}} = 302$  pb<sup>-1</sup>  $61.0 \pm 2.7 \pm 3.3 \pm 1.2$  pb

**CMS,  $\mu$ +jets**  
 CMS-PAS-TOP-23-005,  $L_{\text{int}} = 302$  pb<sup>-1</sup>  $61.9 \pm 2.1 \pm 2.8 \pm 1.2$  pb

**CMS, l+jets**  
 CMS-PAS-TOP-23-005,  $L_{\text{int}} = 302$  pb<sup>-1</sup>  **$61.4 \pm 1.6 \pm 2.7 \pm 1.2$  pb**

**CMS, e $\mu$**   
 JHEP 04 (2022) 144,  $L_{\text{int}} = 302$  pb<sup>-1</sup>  $60.7 \pm 5.0 \pm 2.8 \pm 1.1$  pb

**CMS, combined**  
 CMS-PAS-TOP-23-005,  $L_{\text{int}} = 302$  pb<sup>-1</sup>  **$61.2 \pm 1.6 \pm 2.5 \pm 1.2$  pb**

**ATLAS, (ee,  $\mu\mu$ , e $\mu$ )**  
 JHEP 06 (2023) 138,  $L_{\text{int}} = 257$  pb<sup>-1</sup>  $65.7 \pm 4.5 \pm 1.6 \pm 1.2$  pb

**ATLAS, l+jets**  
 JHEP 06 (2023) 138,  $L_{\text{int}} = 257$  pb<sup>-1</sup>  $68.2 \pm 0.9 \pm 2.9 \pm 1.1$  pb

**ATLAS combined**  
 JHEP 06 (2023) 138,  $L_{\text{int}} = 257$  pb<sup>-1</sup>  $67.5 \pm 0.9 \pm 2.3 \pm 1.1$  pb

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NNPDF4.0 EPJC 82 (2022) 428

MSHT20 EPJC 81 (2021) 341

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20 40 60 80 100 120

$\sigma_{t\bar{t}}$  [pb]

