59.0 fb<sup>-1</sup> (13 TeV) 2018 Events JES\_RelativePtHF<sub>18</sub> (central) CMS 22000  $(sys + 1\sigma)$ Simulation (sys  $-1\sigma$ ) 20000 single top V+jets 18000 16000 14000 12000 10000 8000  $|\Delta_y| < 1.0$  $|\Delta_y| > 1.0$ 6000 4000 2000 rel unc tī 0.05 0 -0.05460-560 100-210 230-250 250-270 270-290 290-310 310-340 340-380 380-440 440-3000 100-280 280-320 320-360 400-460 210-230 360-400 560-3000

 $M_{bl}$  [GeV/c<sup>2</sup>]