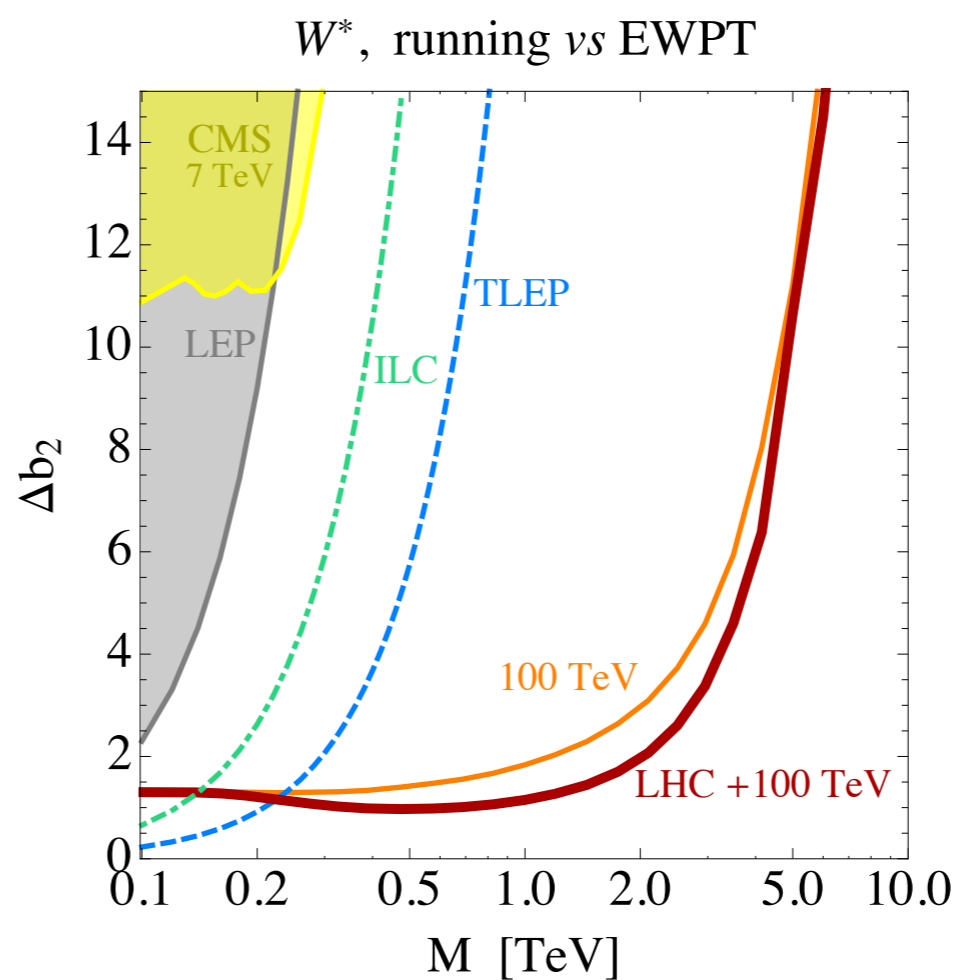
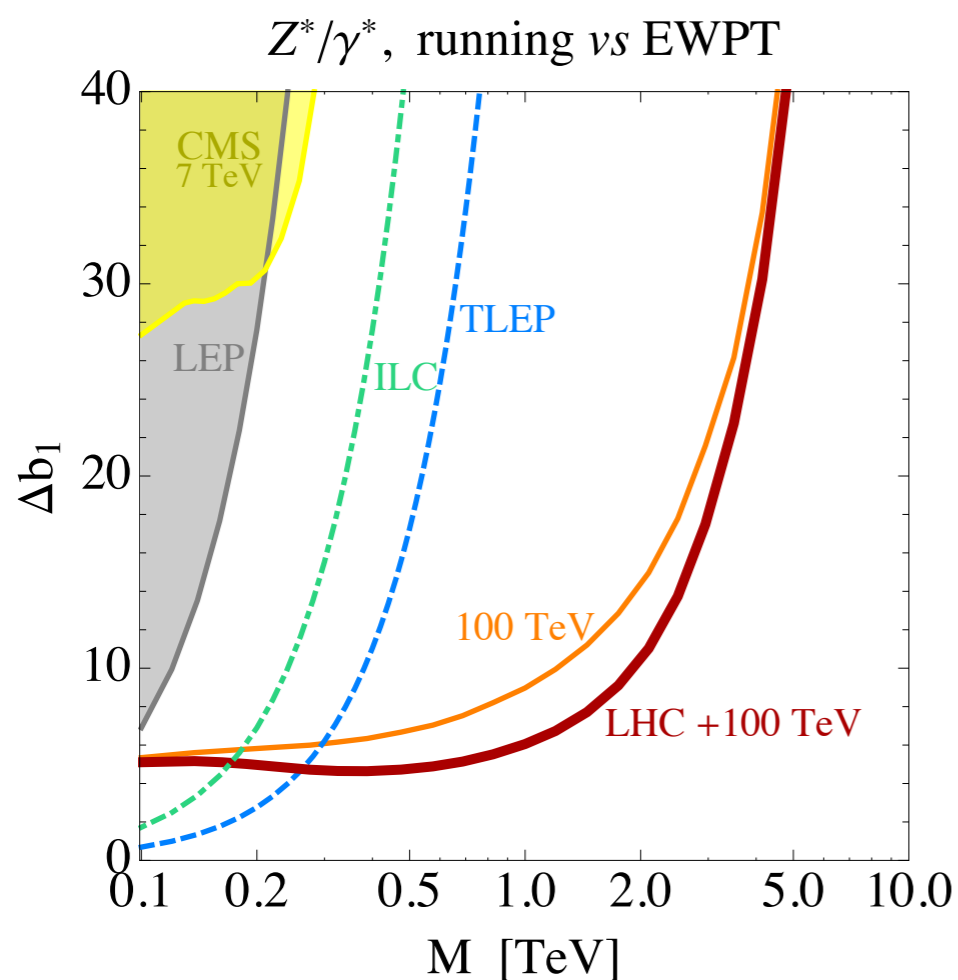
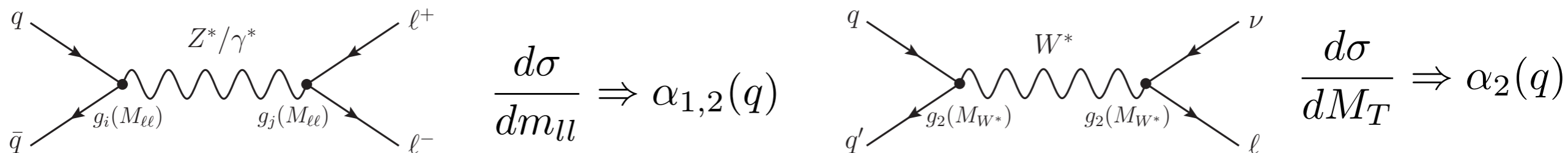


# Running Electroweak Couplings as a Probe of New Physics



100 TeV:  
reach ( $2\sigma$ ):

$$m_{\tilde{W}} \lesssim 1.3 \text{ TeV}$$

$$m_5 \lesssim 5 \text{ TeV}$$

- Daniele Alves, Jamison Galloway, JTR, Jon Walsh, [1410.6810](https://arxiv.org/abs/1410.6810)

# things to do

what we included:

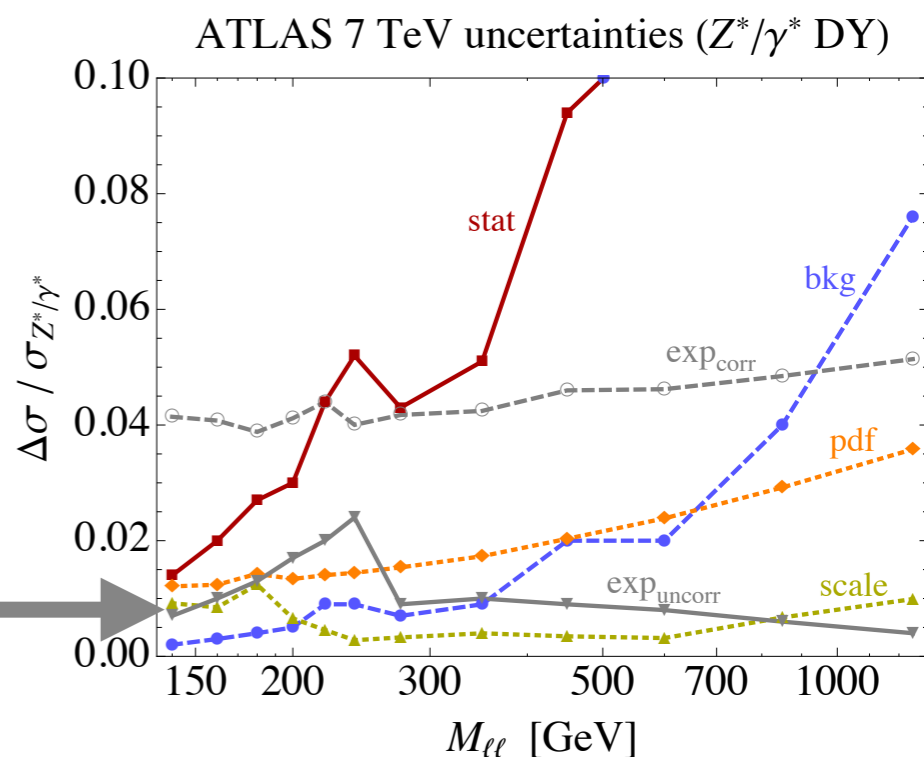
- current PDF uncertainty (NNPDF2.3)
- NNLO QCD scale
- top background subtraction
- new states @ LO (leading log)

what to do:  
(exp.)

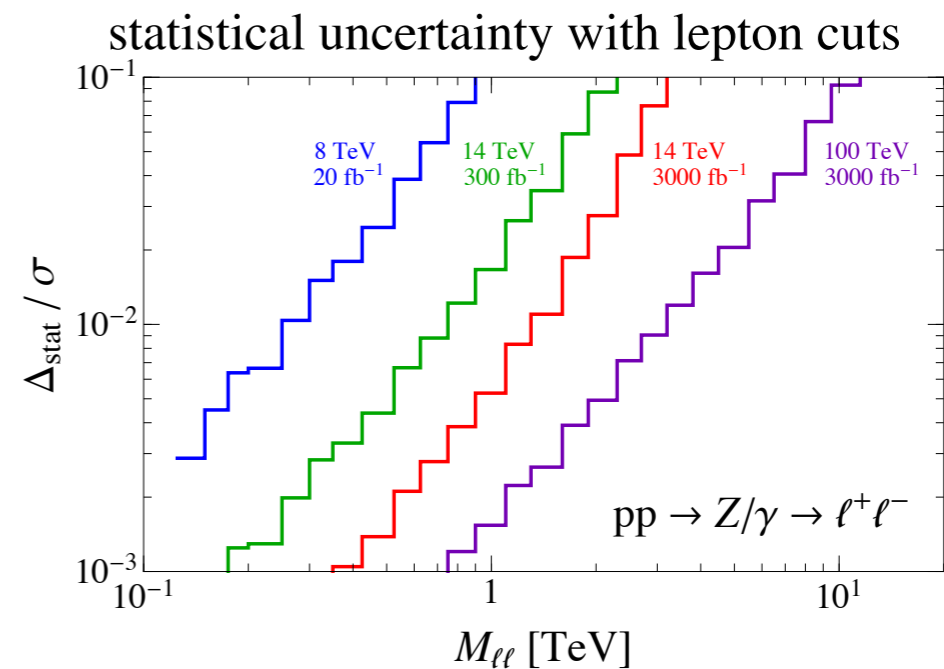
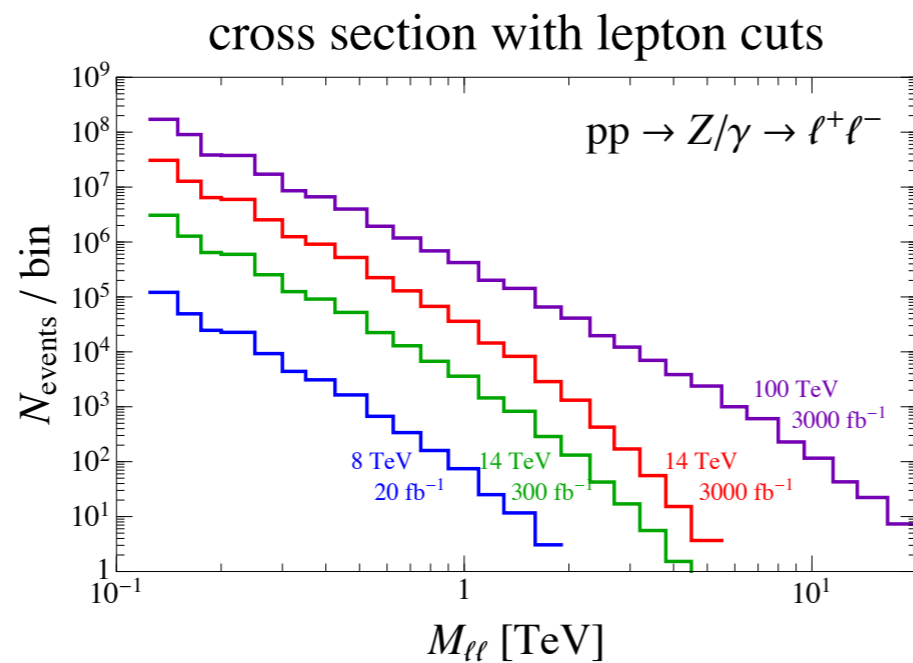
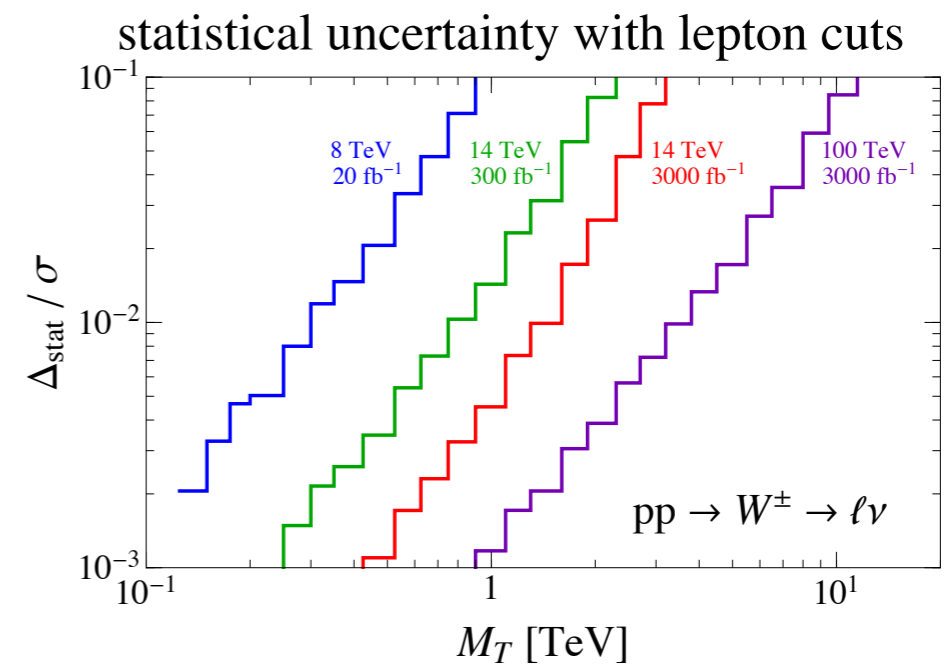
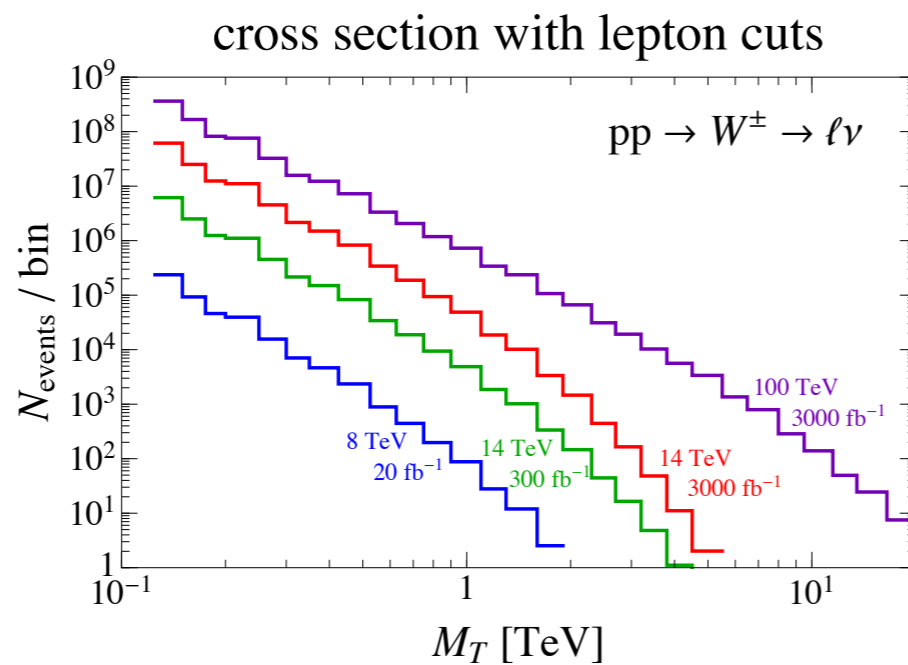
- uncertainty on  $m_{ll}, m_T$
- correlations crucial

what to do:  
(theory)

- full NLO EW with new states
- EW logs

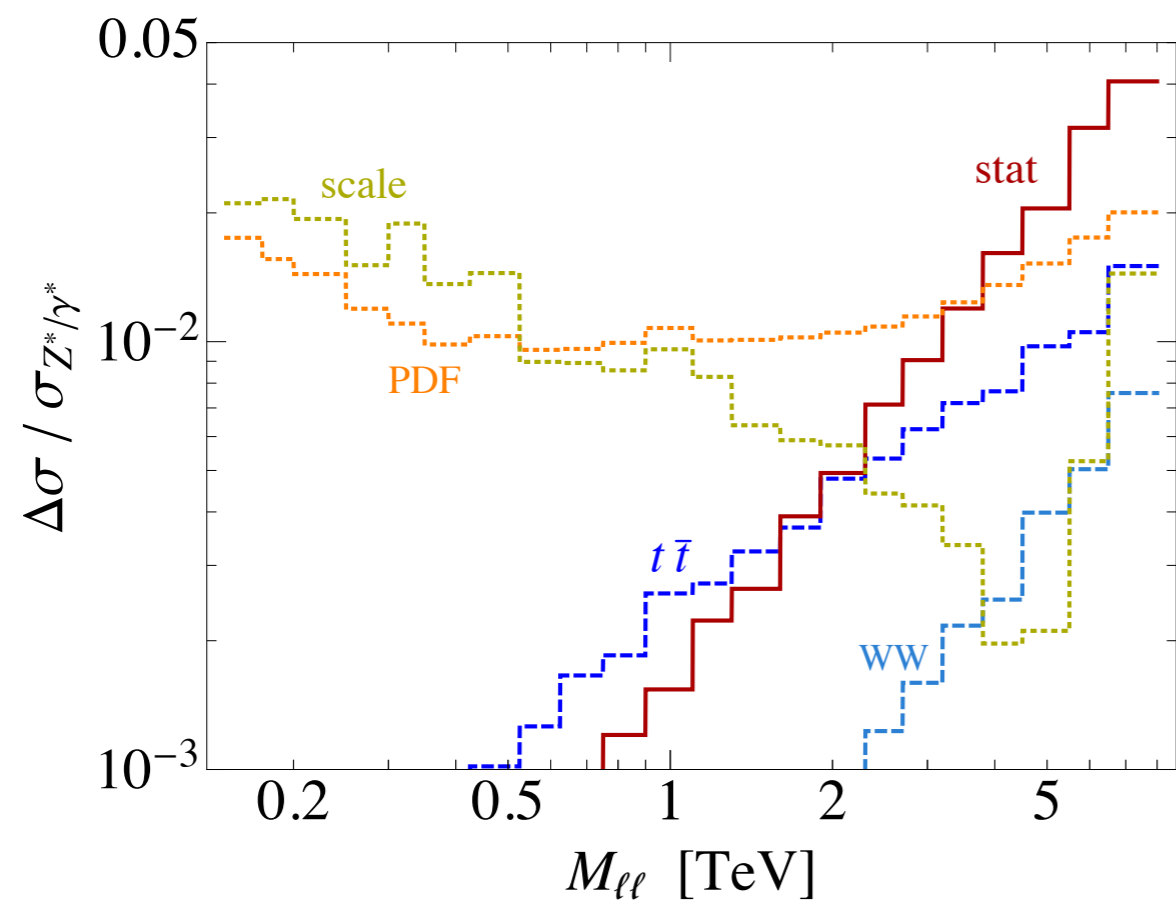


# backup 1

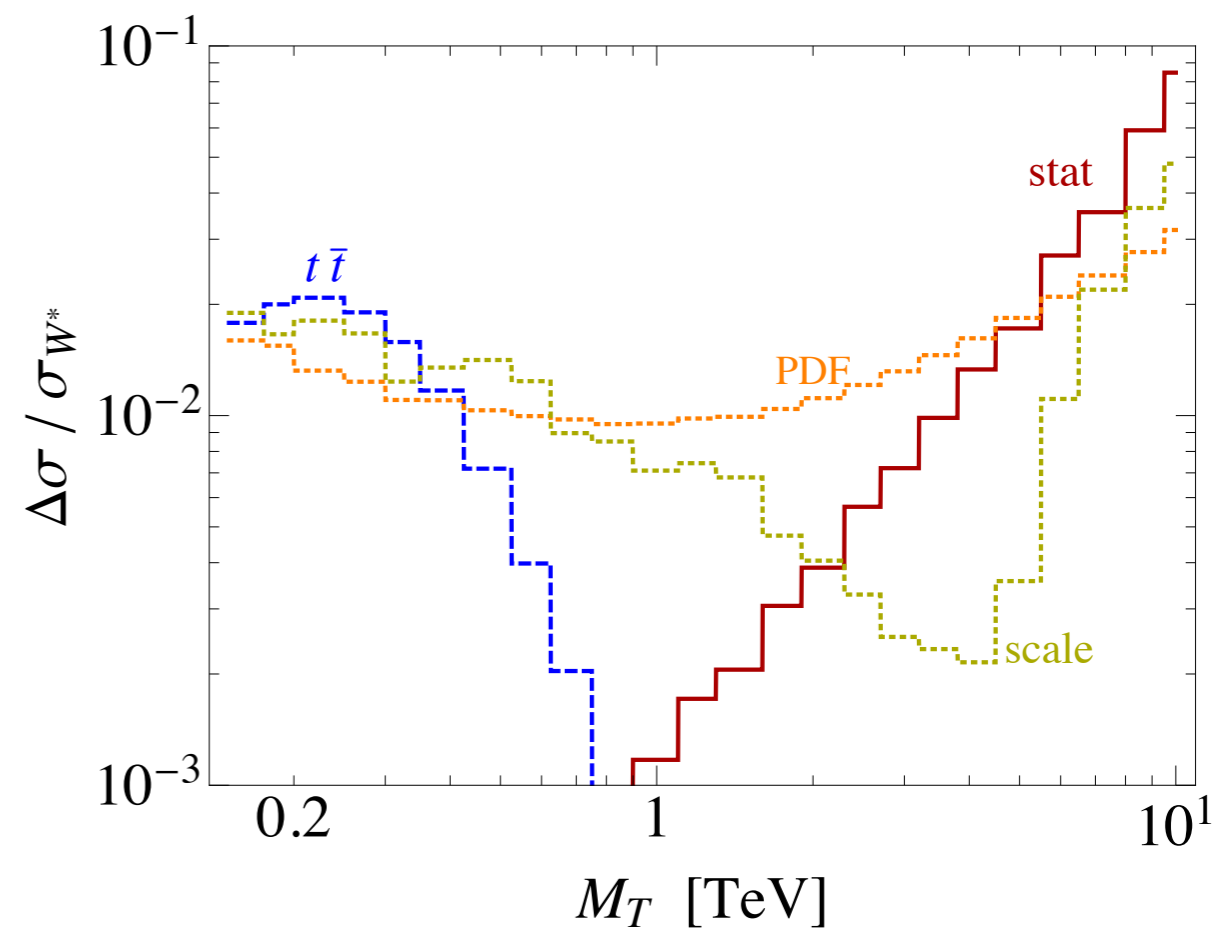
 $Z^* / \gamma^*$ 

 $W^*$ 


# backup 2

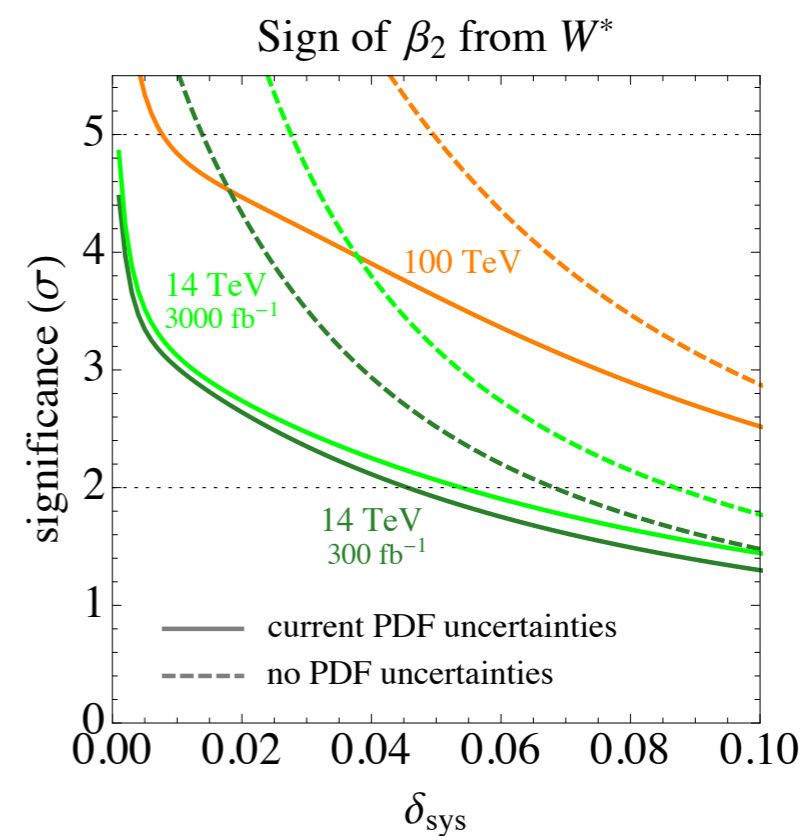
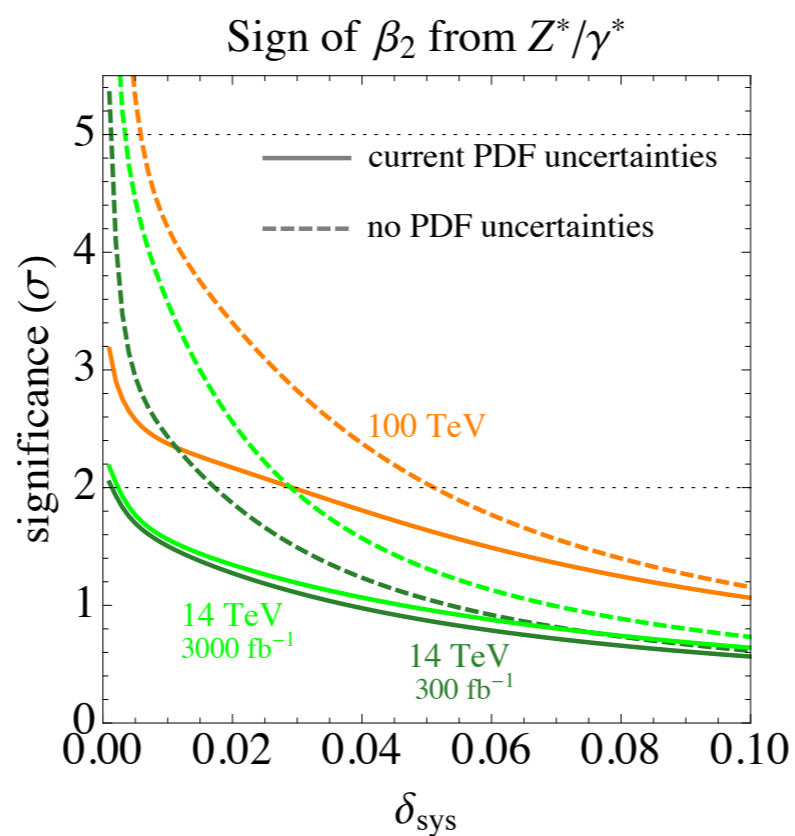
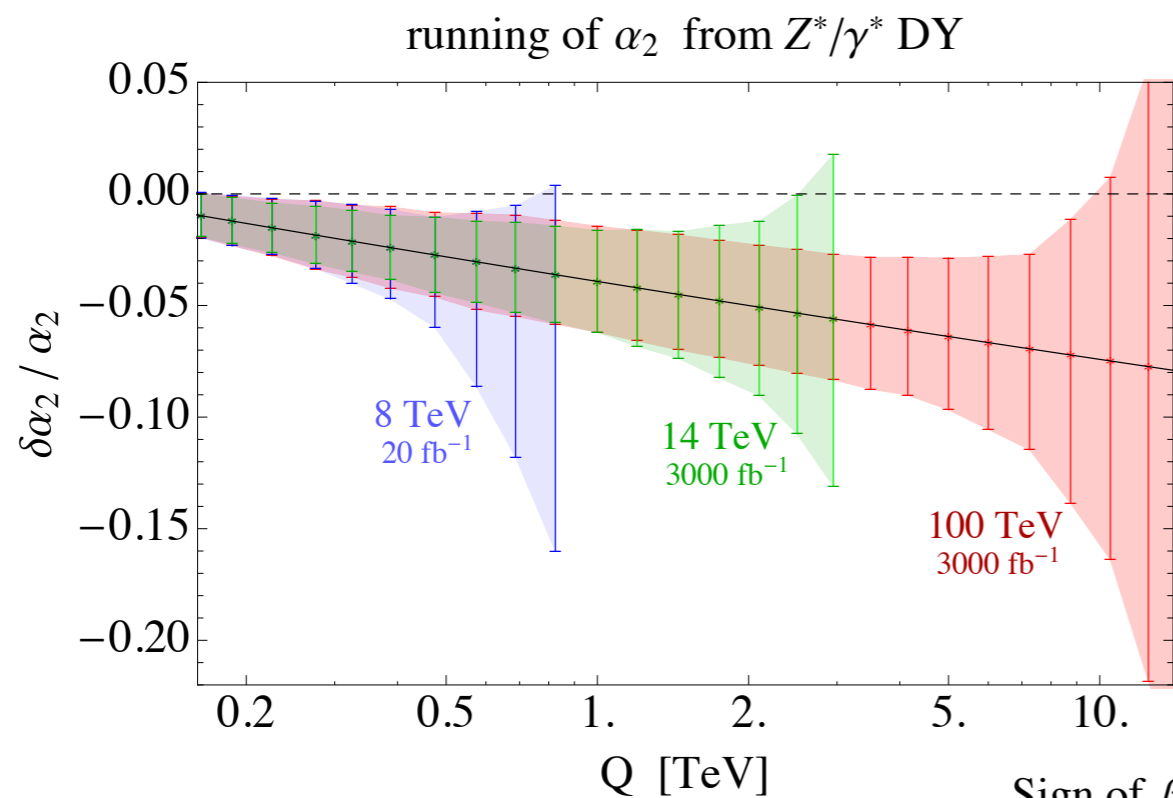
100 TeV uncertainties ( $Z^*/\gamma^*$  DY)



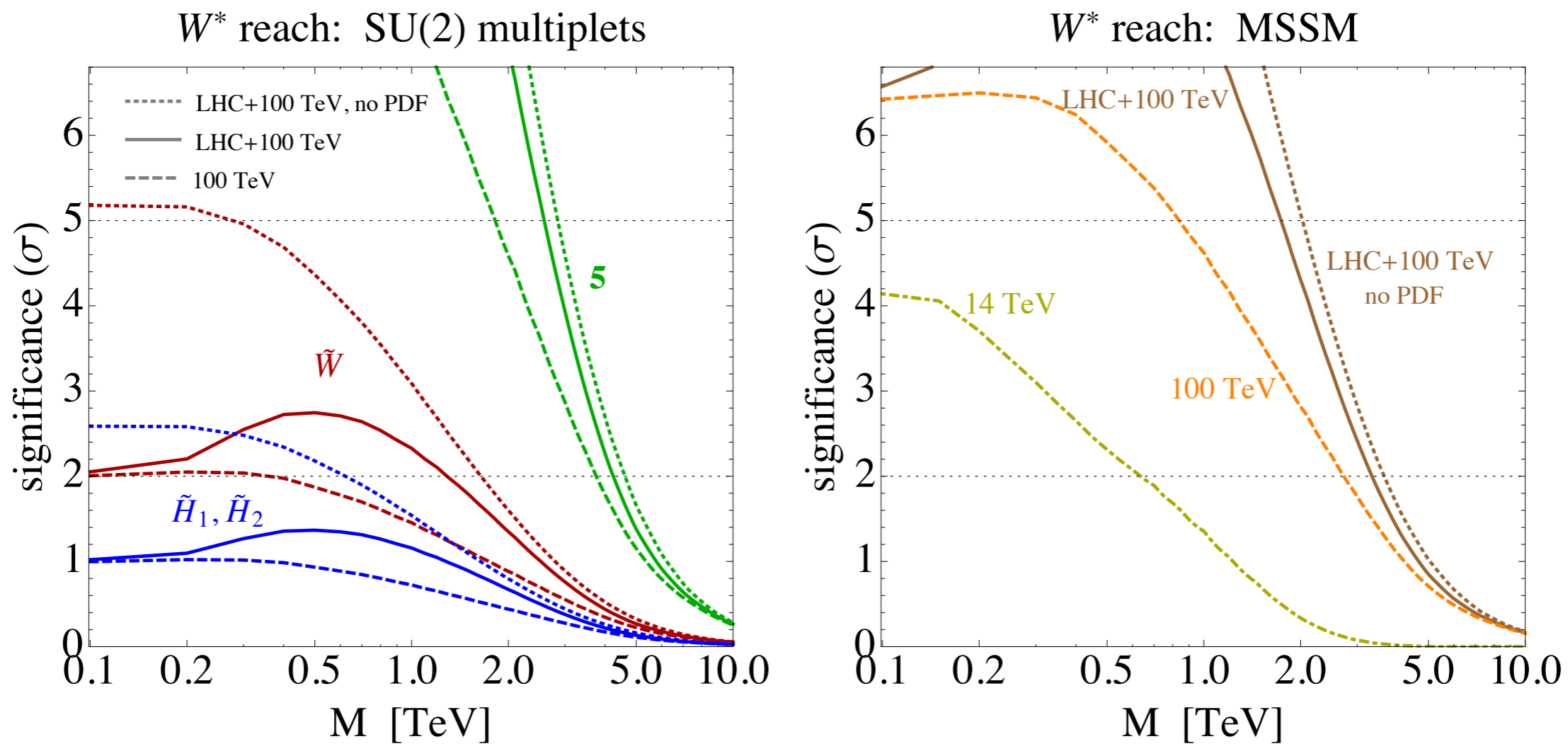
100 TeV uncertainties ( $W^*$  DY)



# backup 3



# backup 4



# backup 5

