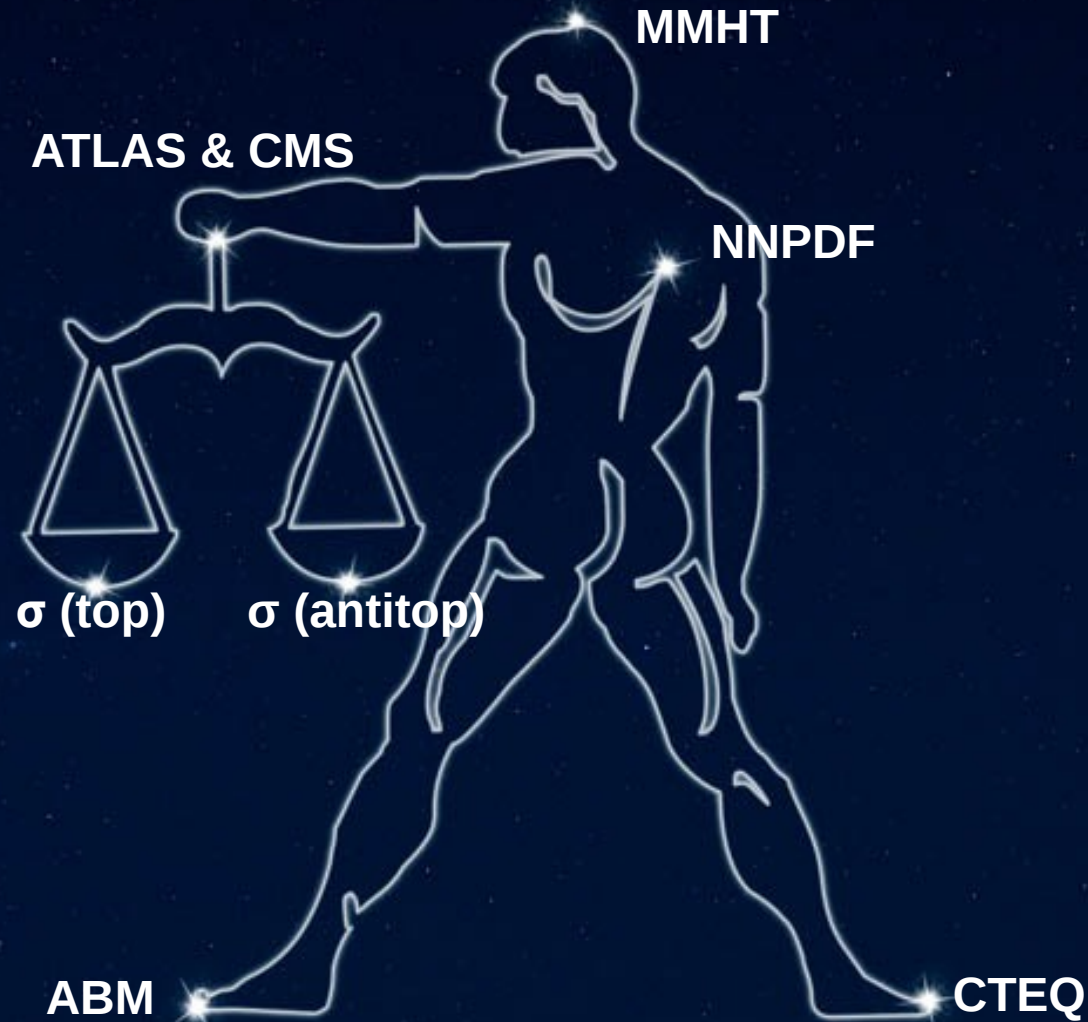


The ratio between top and antitop cross sections

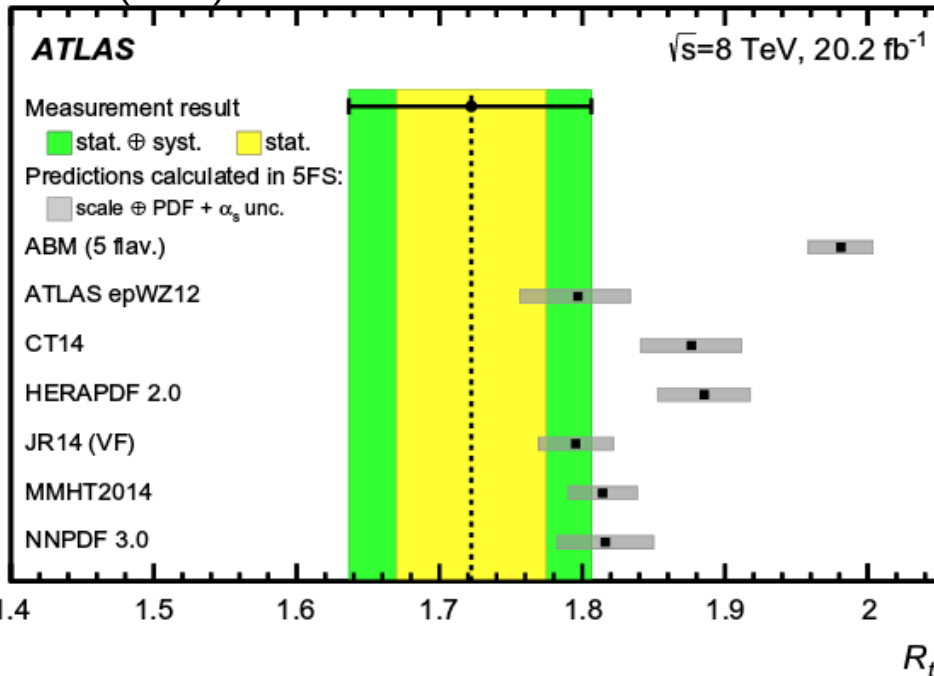
Comparing data with different PDF predictions



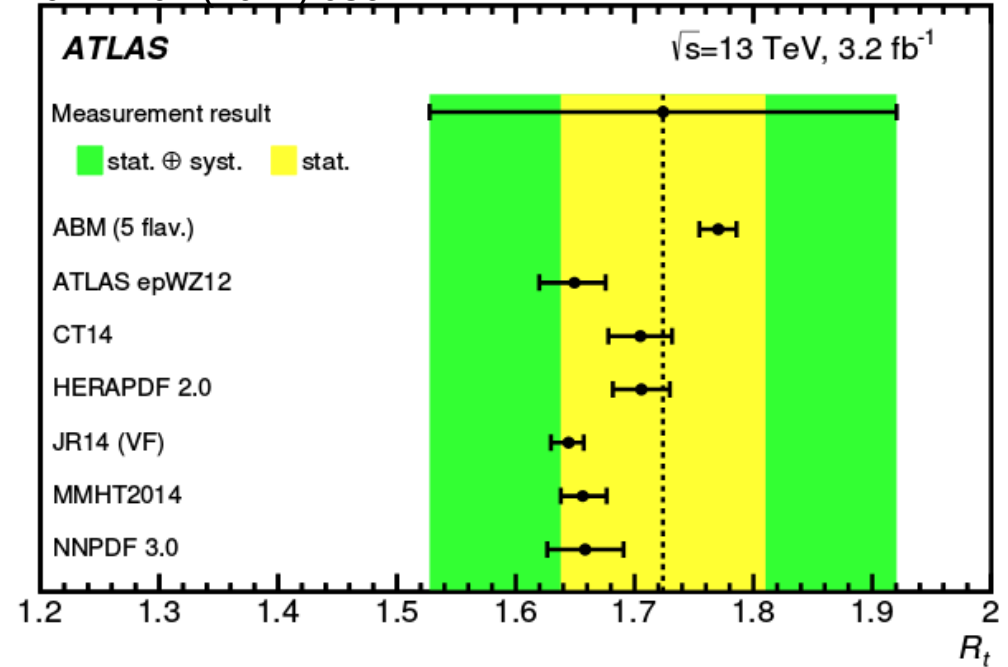
Measured ratio R compared with NLO calculations using HATHOR 5FS



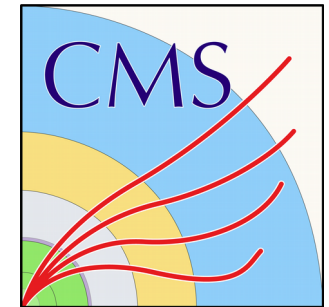
EPJC (2017) 77:531



JHEP 04 (2017) 086



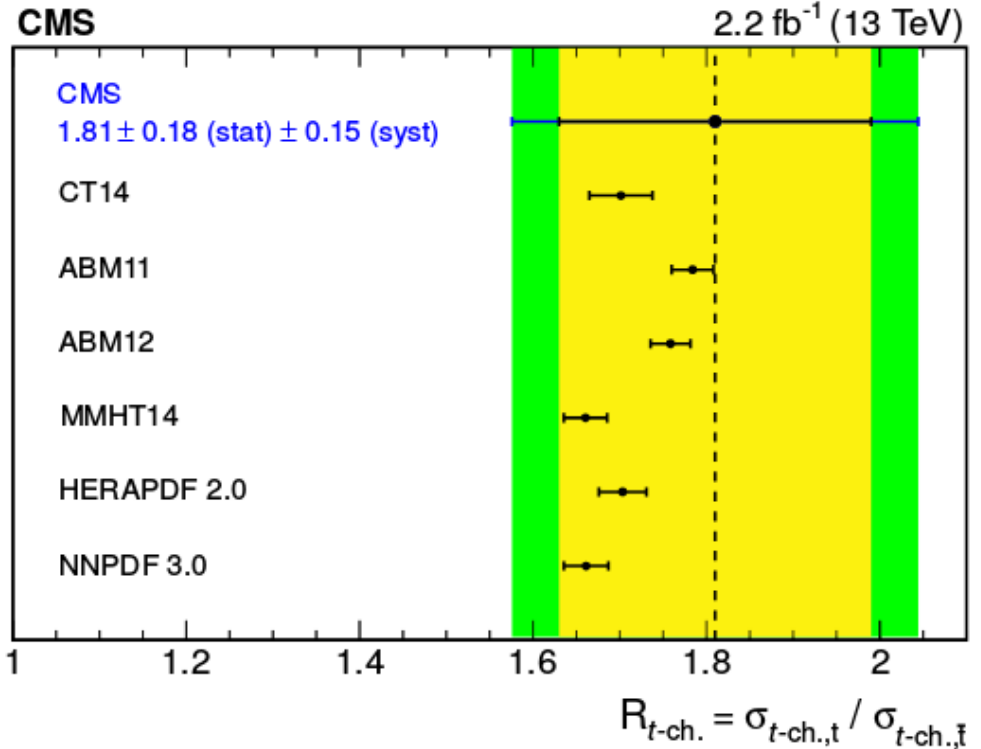
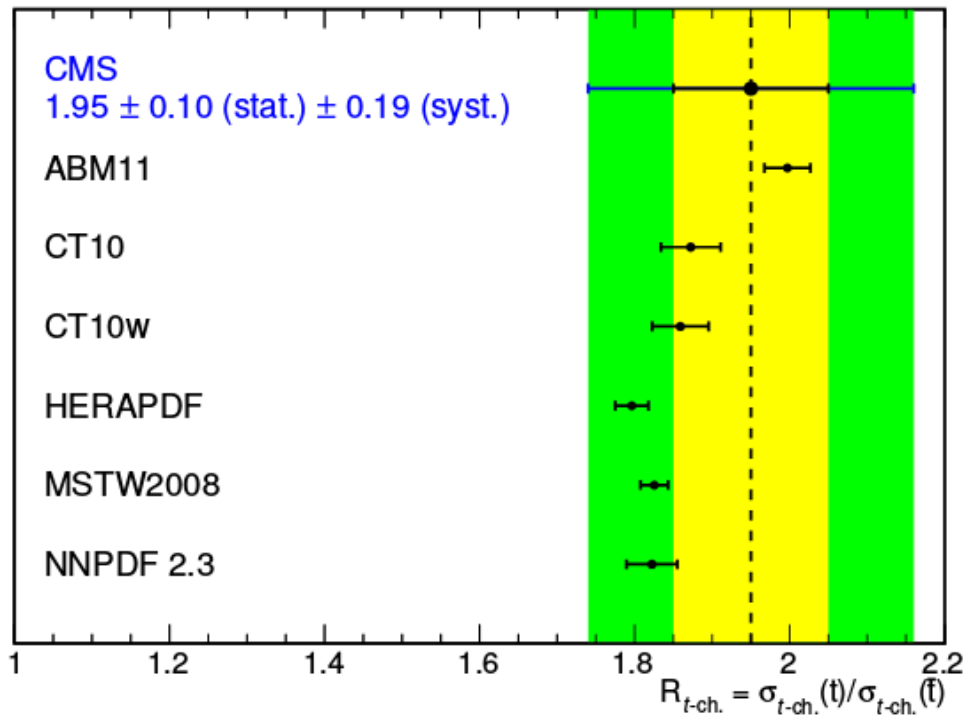
Measured ratio R compared with NLO calculations using POWHEG 4FS

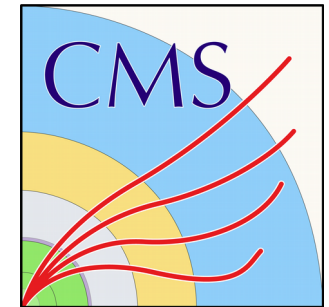


JHEP 06 (2014) 090

PLB (2017) 772, 752

CMS, $\sqrt{s} = 8 \text{ TeV}$, $L = 19.7 \text{ fb}^{-1}$



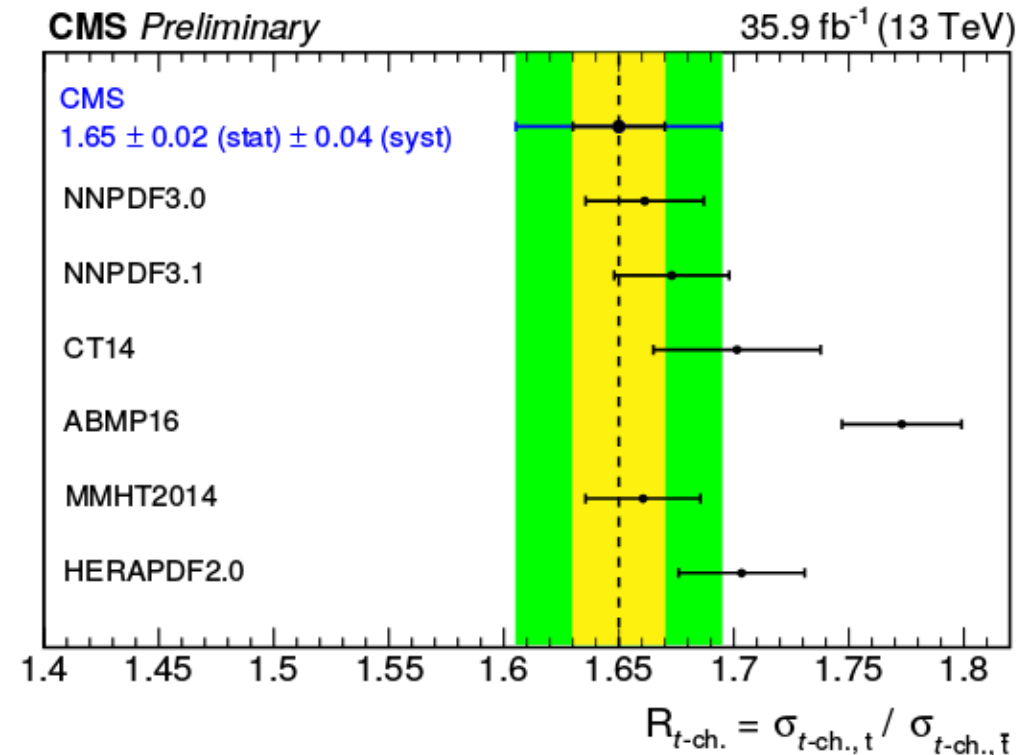
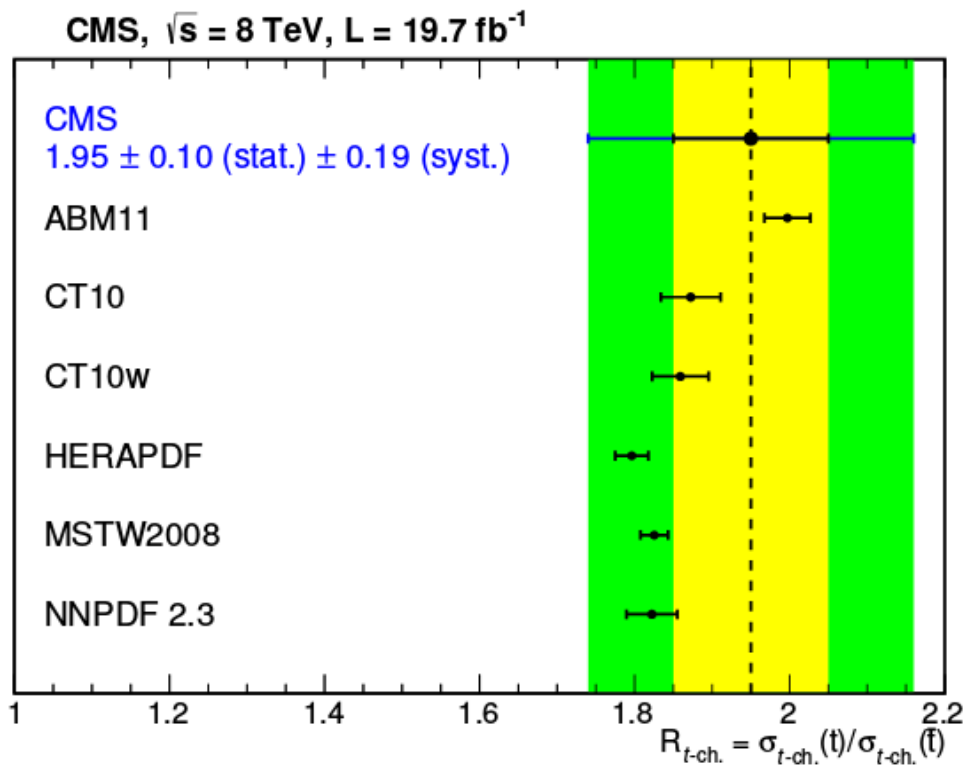


Measured ratio R compared with NLO calculations using POWHEG 4FS

→ For the upcoming publication of the 13 TeV result, CMS will switch to **HATHOR 5FS**

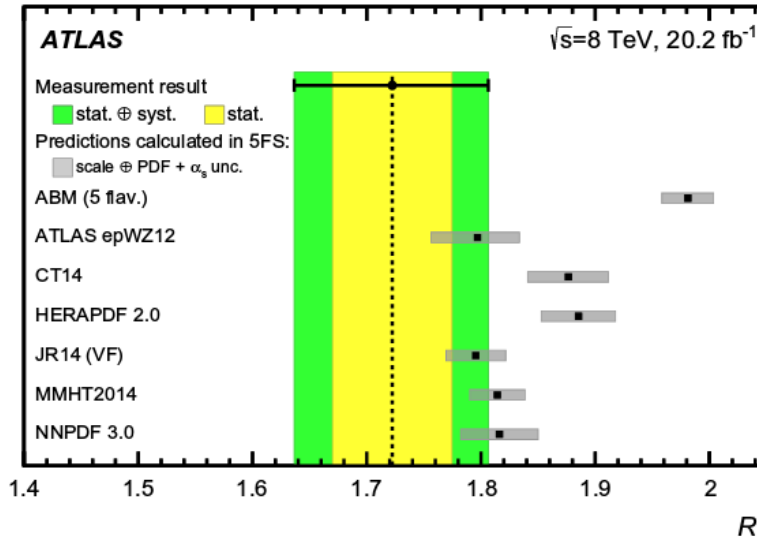
JHEP 06 (2014) 090

CMS-PAS-TOP-17-011

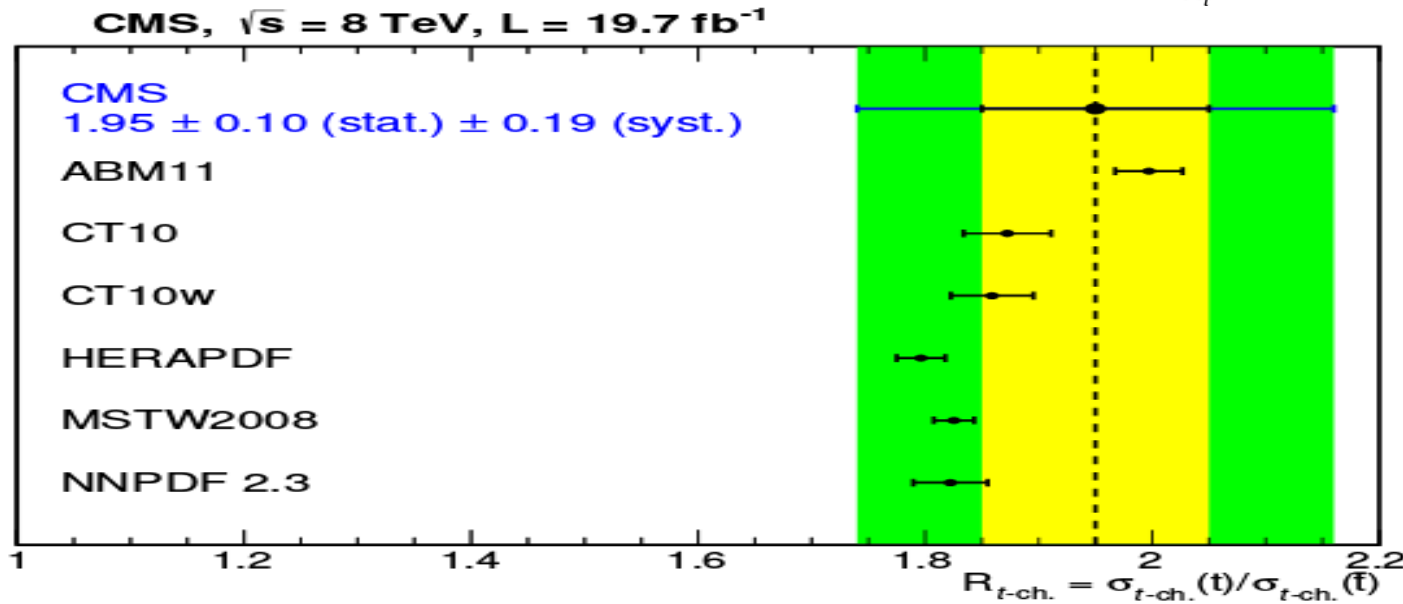


Ratio at 8 TeV: ATLAS and CMS

(Plots brought to the same scale on the x-axis)

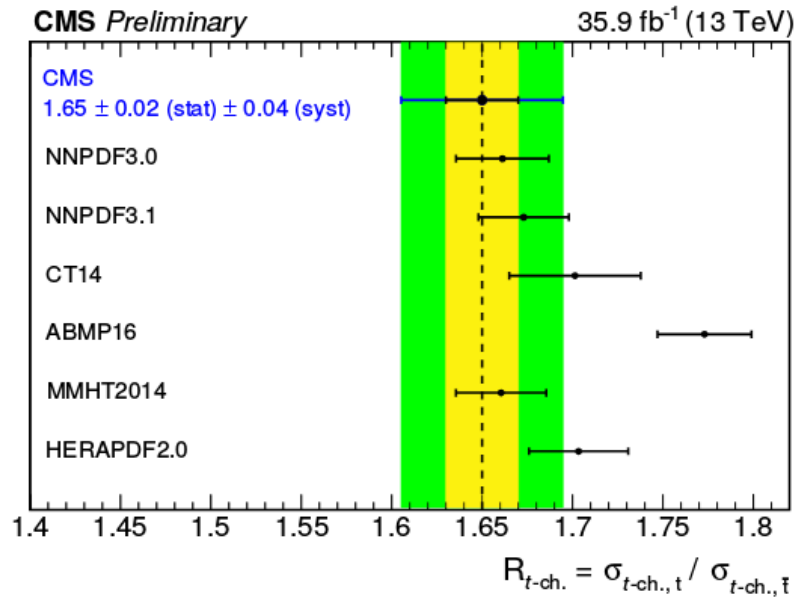
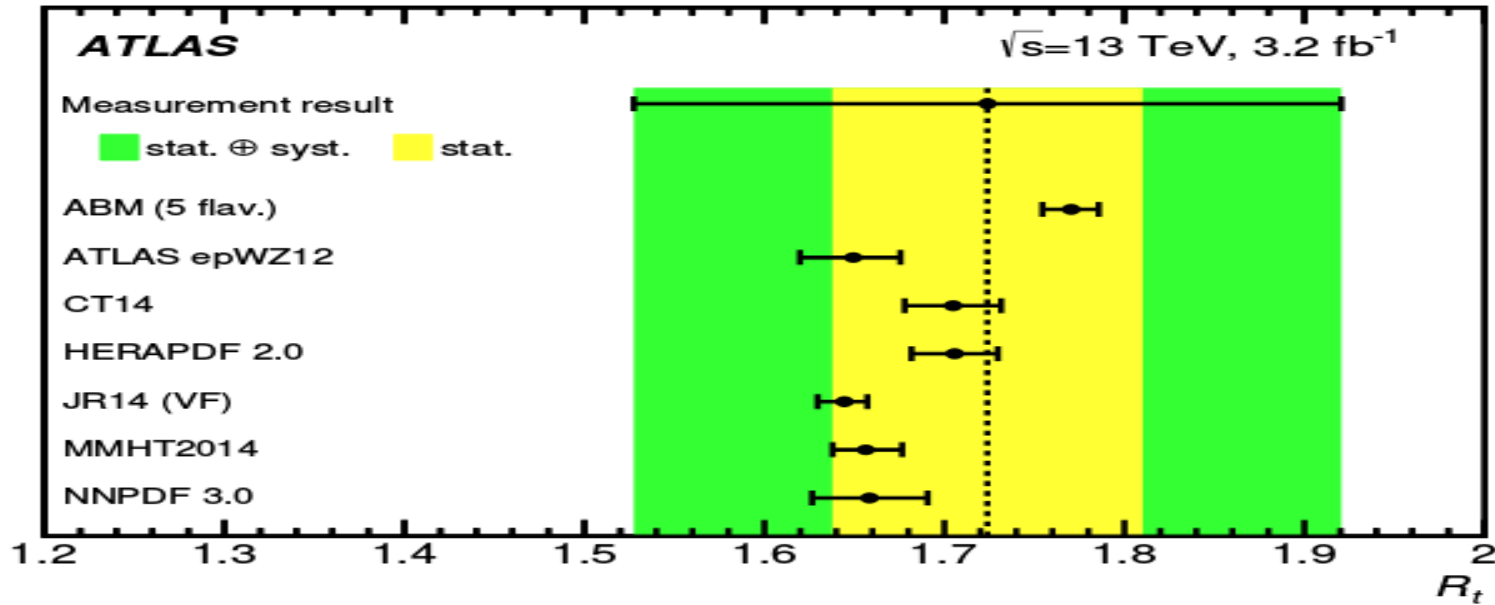


- ATLAS result on the low side, CMS result on the high side of the predictions
- ATLAS result more precise than CMS result
- There is some range in the predictions: different input data, different fit methods, ...?



Ratio at 13 TeV: ATLAS and CMS

(Plots brought to the same scale on the x-axis)



- ATLAS and CMS results closer together
- CMS result more precise than ATLAS result
- There is some range in the predictions: different input data, different fit methods, ...?

- Experimental results becoming more and more precise
- Experimental uncertainty reaching the uncertainty of the theory predictions
- Differences in predictions:
 - Where do they come from?
- The data should be compared with predictions using 4FS / 5FS, which α_s to use, which top mass to use...



Looking forward to the presentations of the different PDF-groups and the discussions!