Unbinned fit
in Zy boosted analysis

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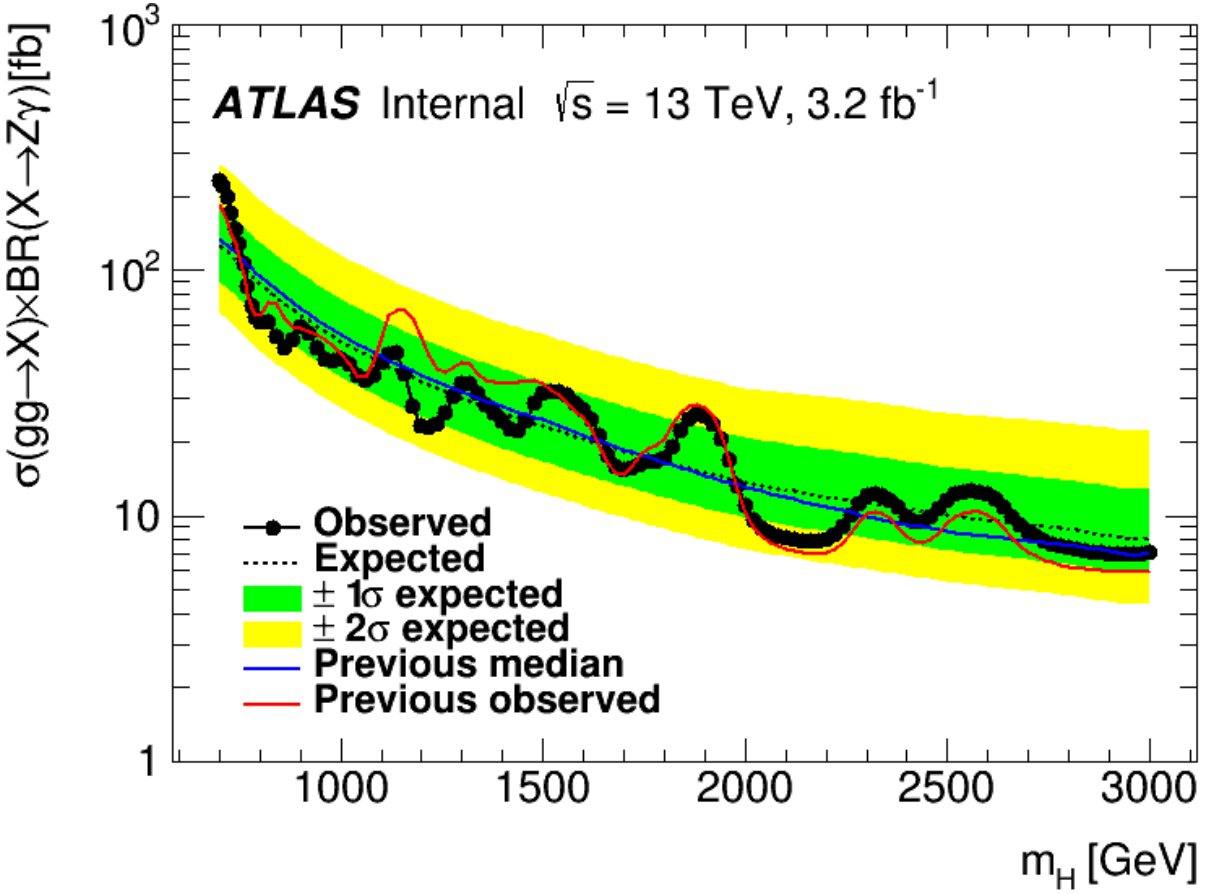
2016-03-22

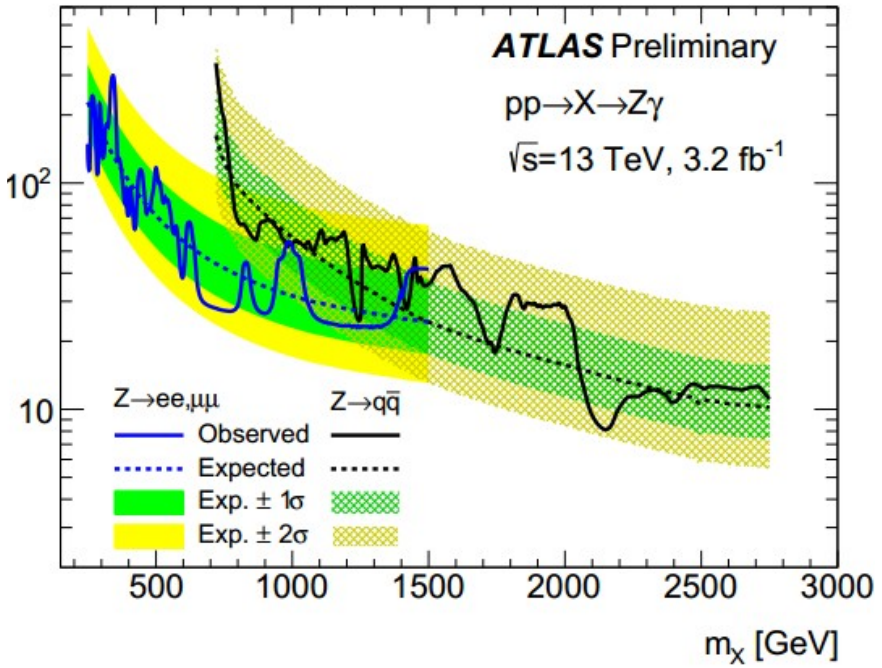
What is new

- Using the latest generate_signalTemplates-5.C
  - Updated GRL, should affects data and obs limits in 1000-1500GeV
  - Add lepton veto, affecting high mass efficiency (>2000GeV), dropping ~<3%
  - Need to add CrossCalib uncertainty due to D2 RUN 1 calibration

Updated limits

- The blue curve in left is the previous median
- The red curve in left is the previous observed

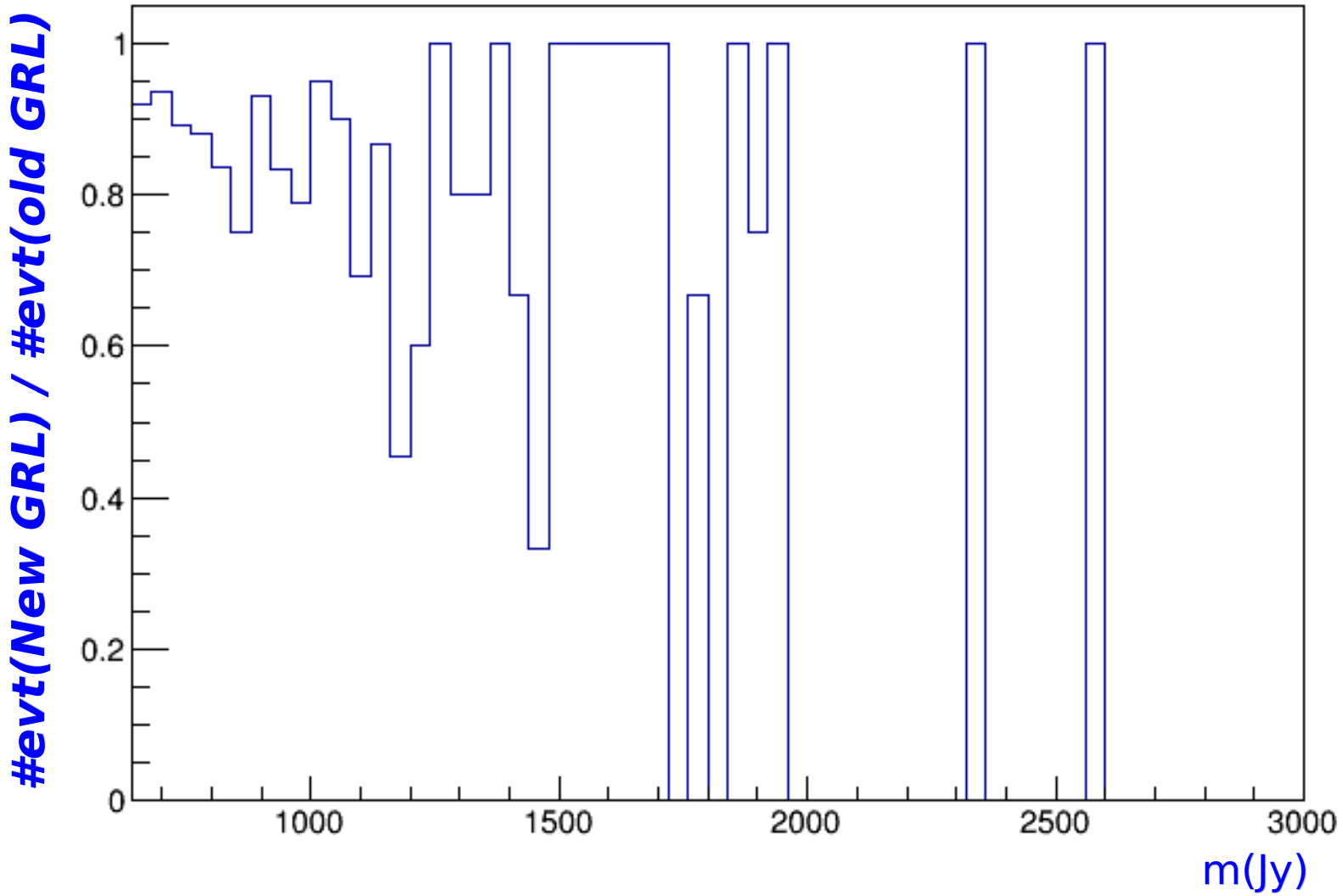




Leptonic: unbinined
Boosted: binned fit

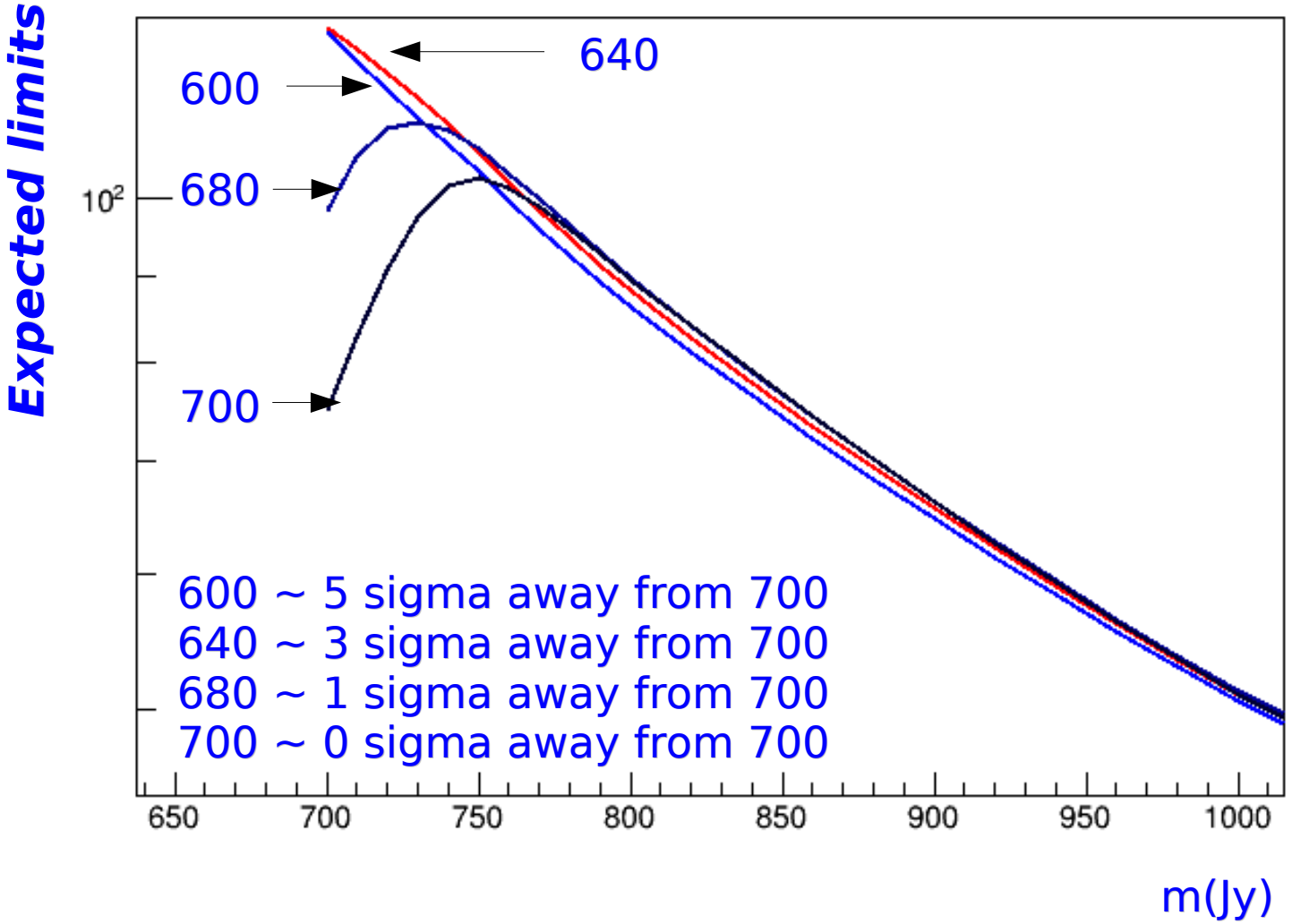
Data with new GRL

- #evt(new GRL)/#evt(old GRL) vs mass



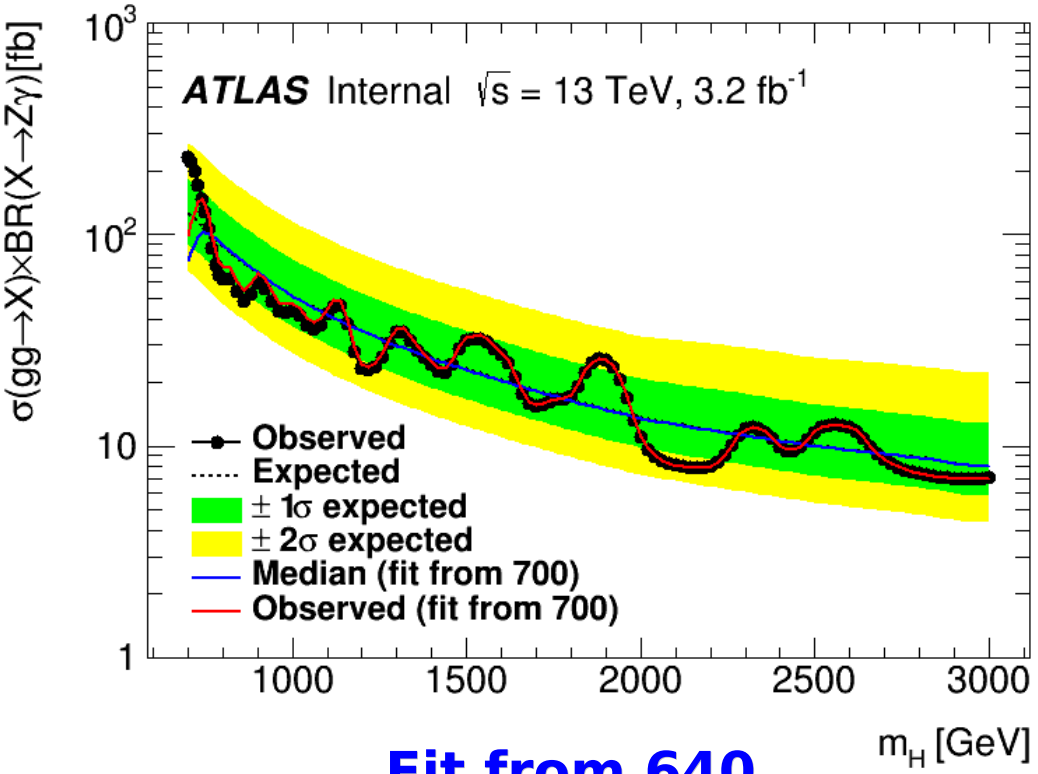
Fit range (starting edge)

- Expected limits with different fit range (starting from 600,640,680,700)

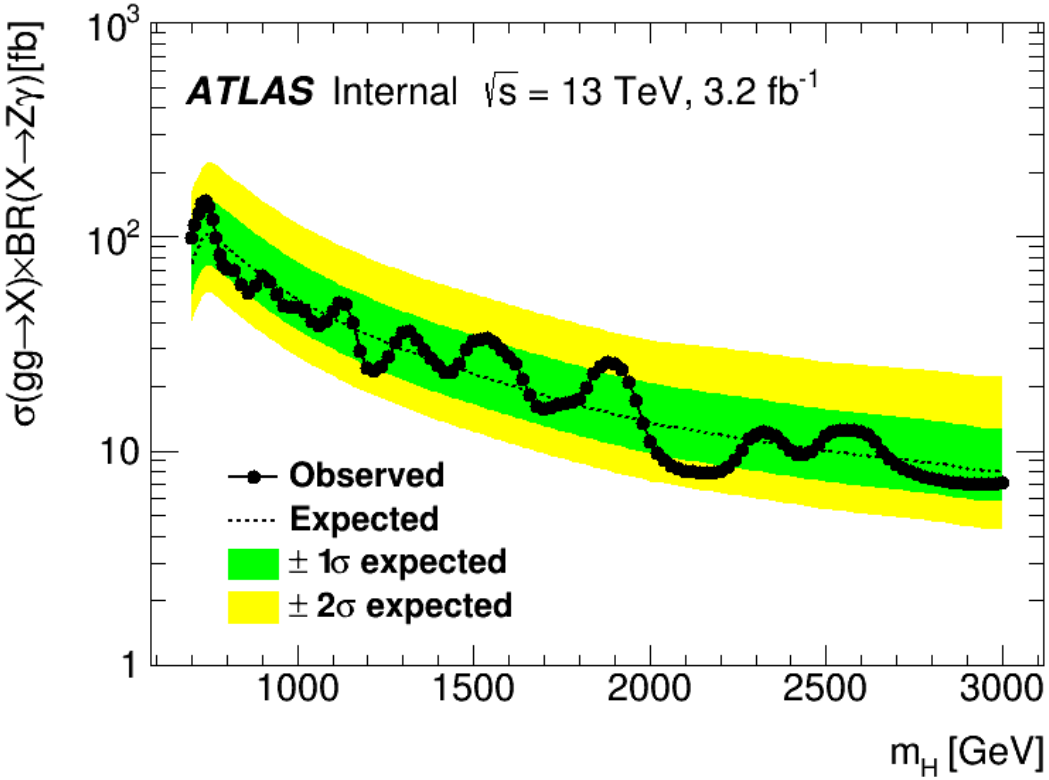


Fitting edge effects

- Default fit starting point: 640
- Alternatively tried with starting point: 700



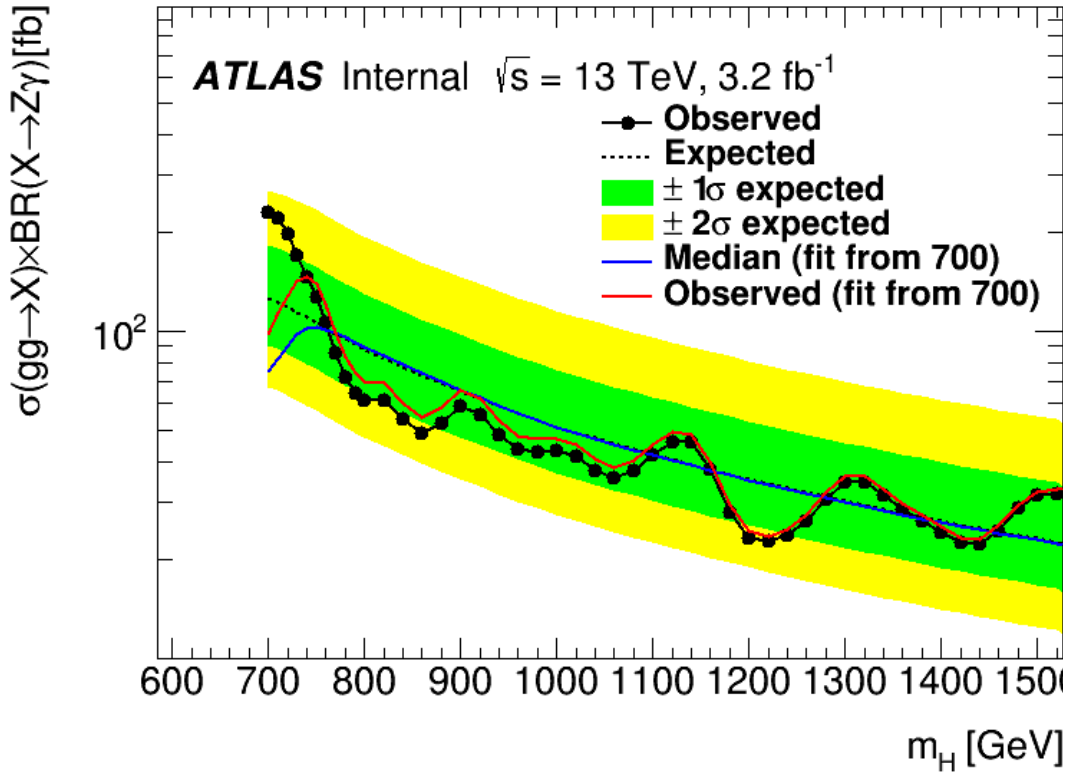
Fit from 640 (default)
Fit from 700 on top

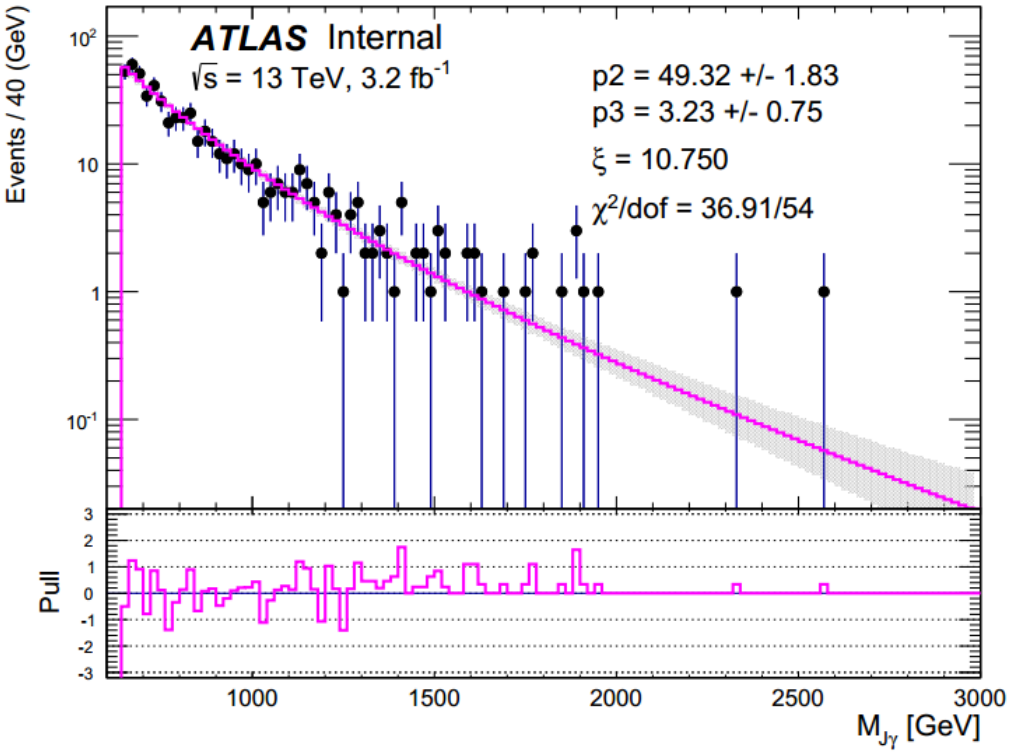


Fit from 700

Fit starting 700

- Zoom in

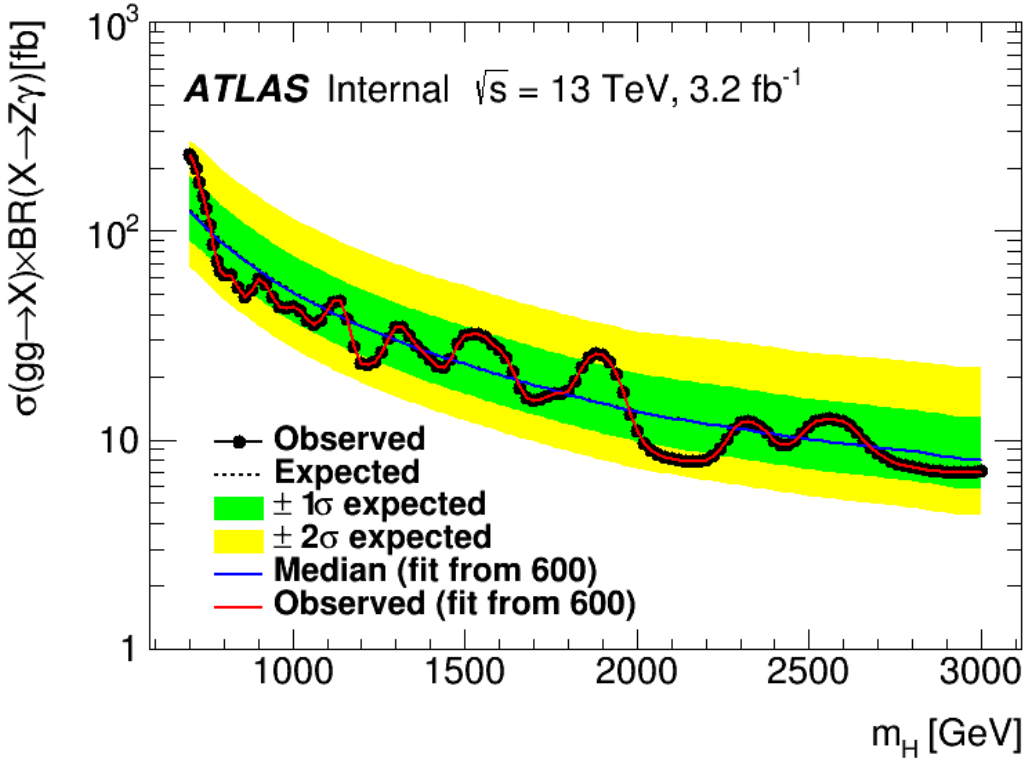




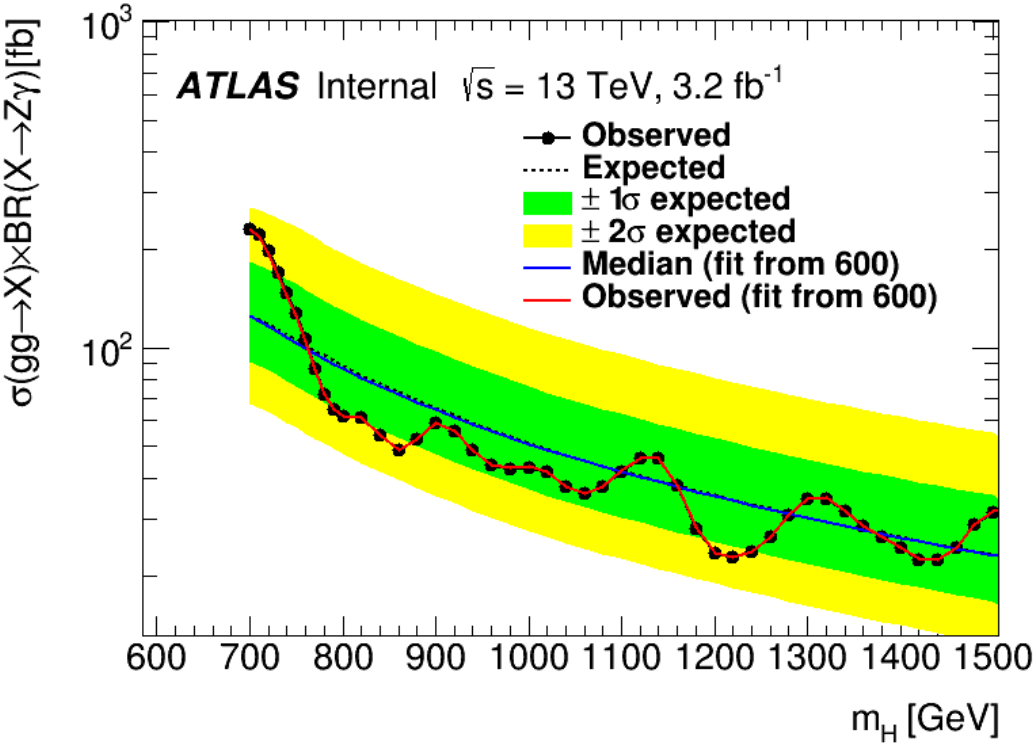
Data excess sits around 660-700
Data deficit sits around 700-720

Fit starting 600

- Fit range starts from 600



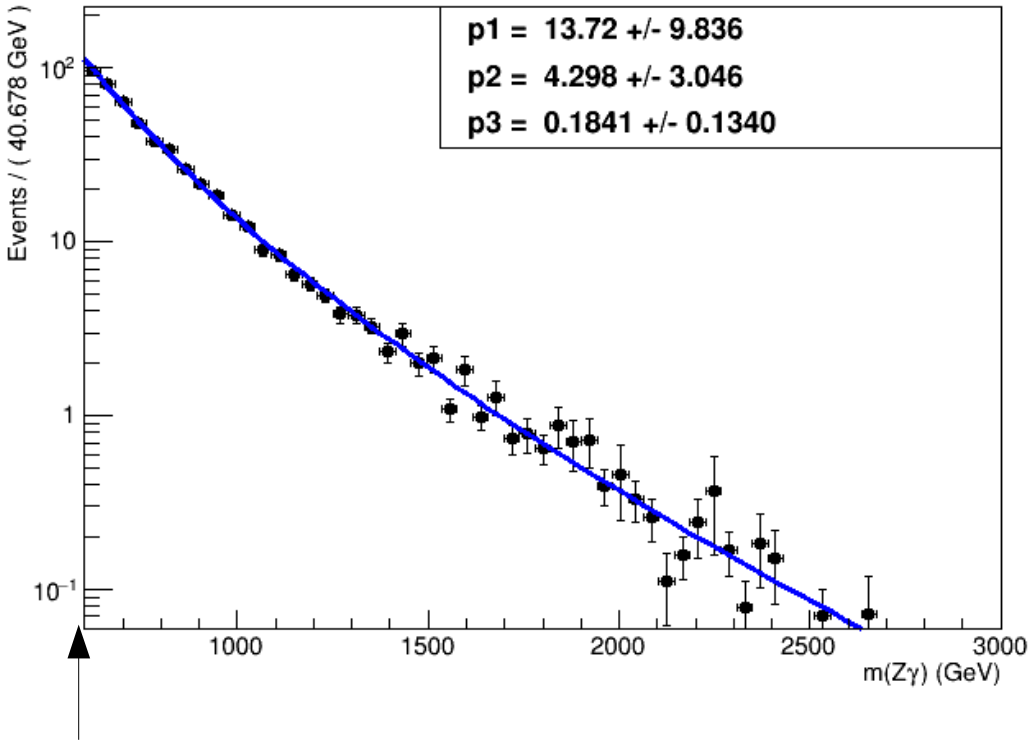
Fit from 640 (default)
Fit from 600 on top



Zoom in

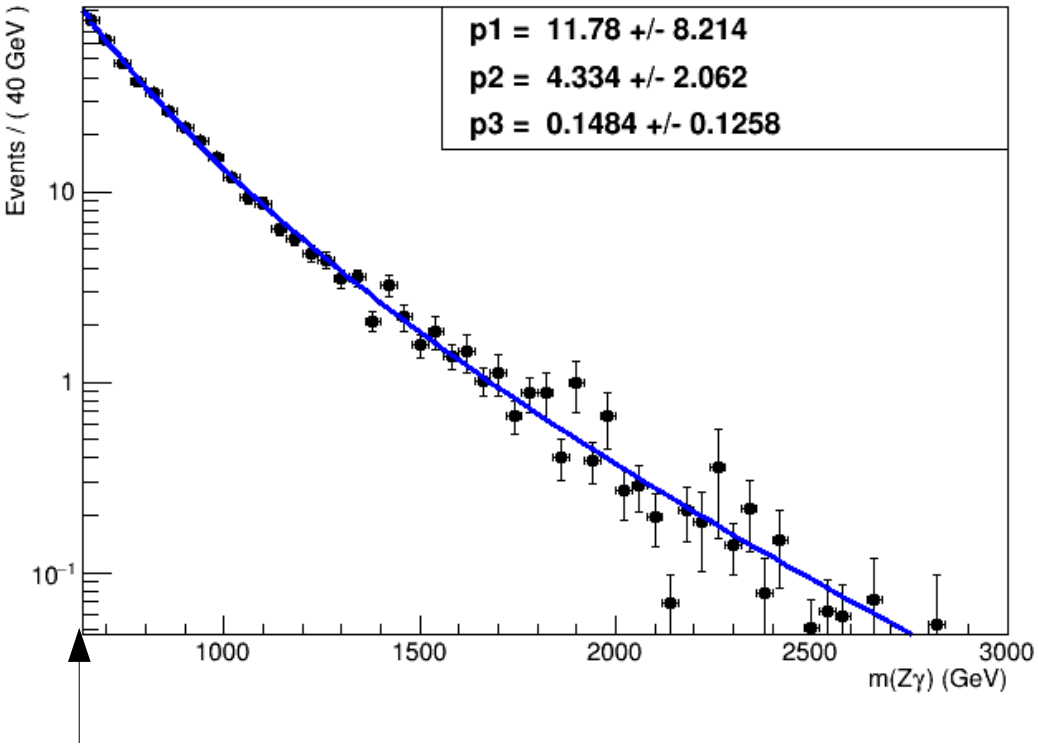
Fit starting 600

- Test with MC yjets background



600

Fit from 600



640

Fit from 640

Conclusion

- We stay with 640, which was chosen before unblinding
- Being blinded, we did not know there is data excess or deficit in our fitting range
- After unblinding, if there were data excess or deficit, then there are
- Do not change the choice made before unblinding, only get to know what would be affected if the choice were different