Unbinned fit
in Zy boosted analysis

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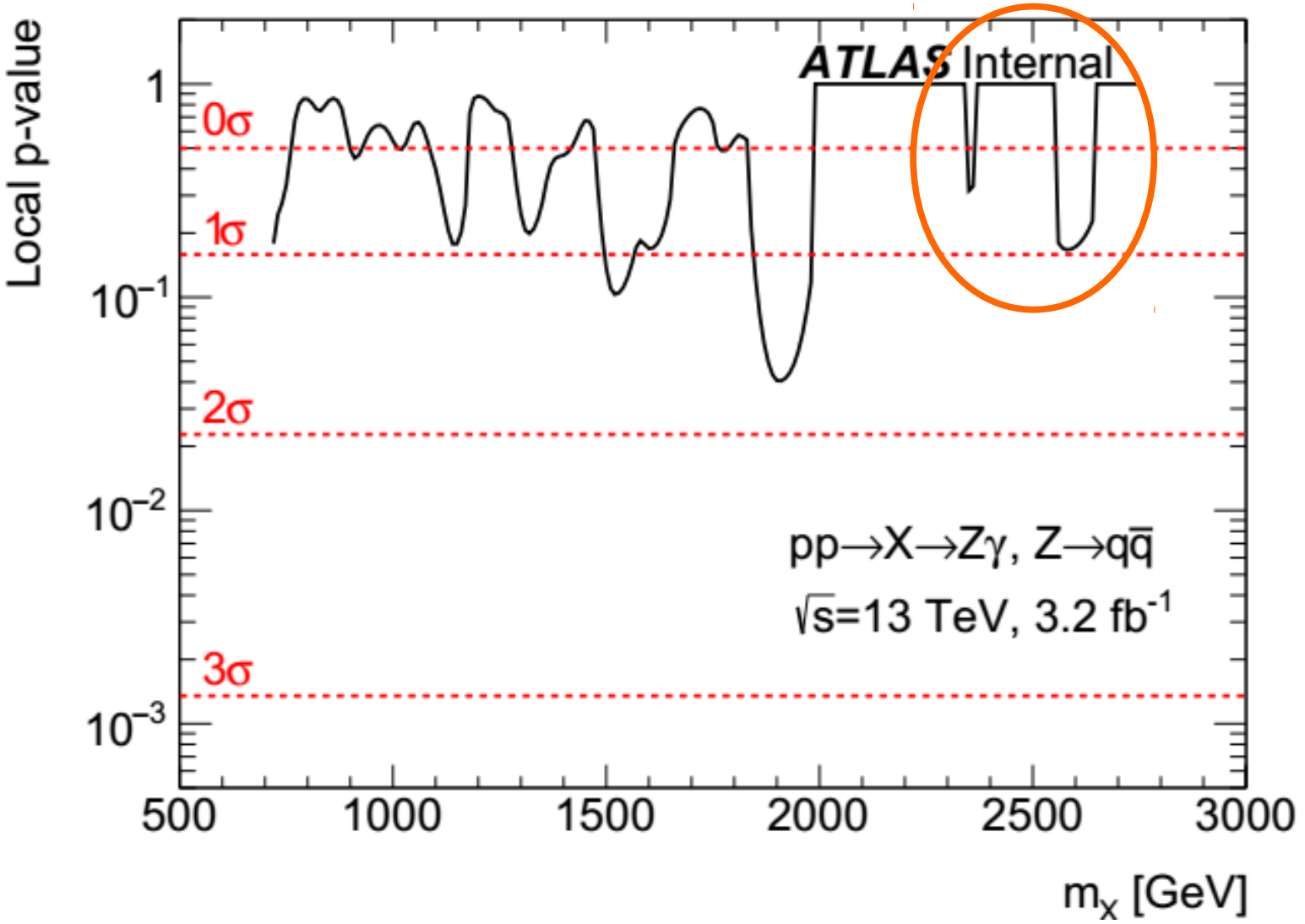
p0 issue @ 2.6TeV

Bill asked:

Fig 13 b shows p-values where the event at 2.35 TeV makes a delta-function spike, while that at 2.6 TeV is much broader.

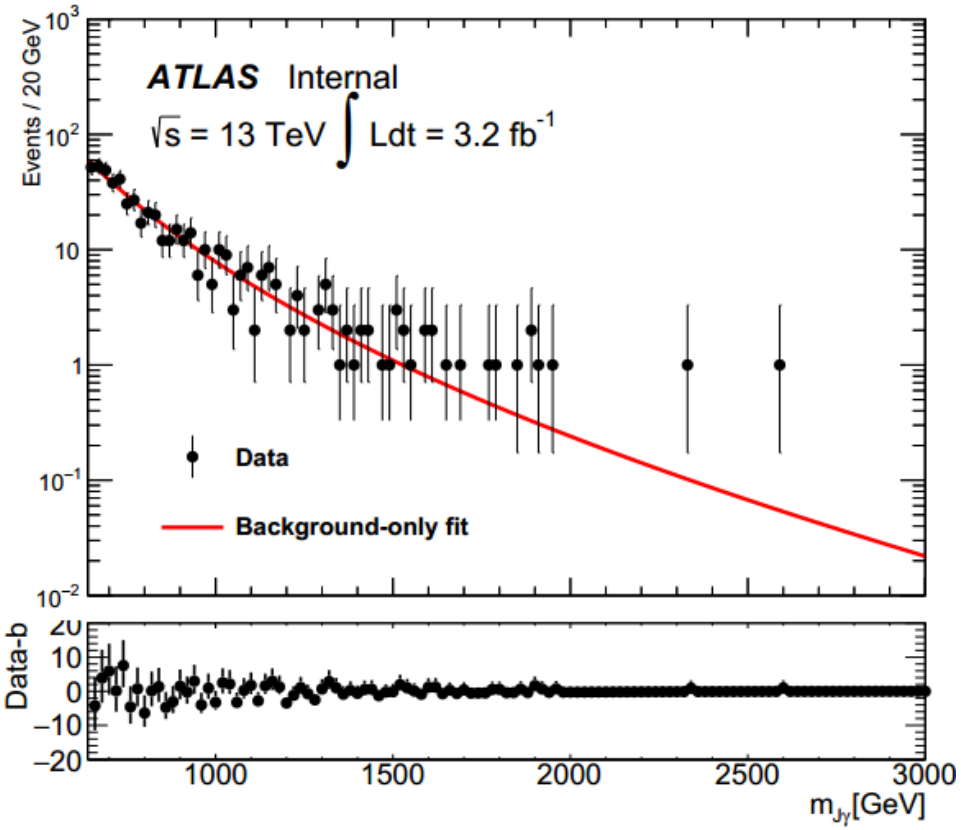


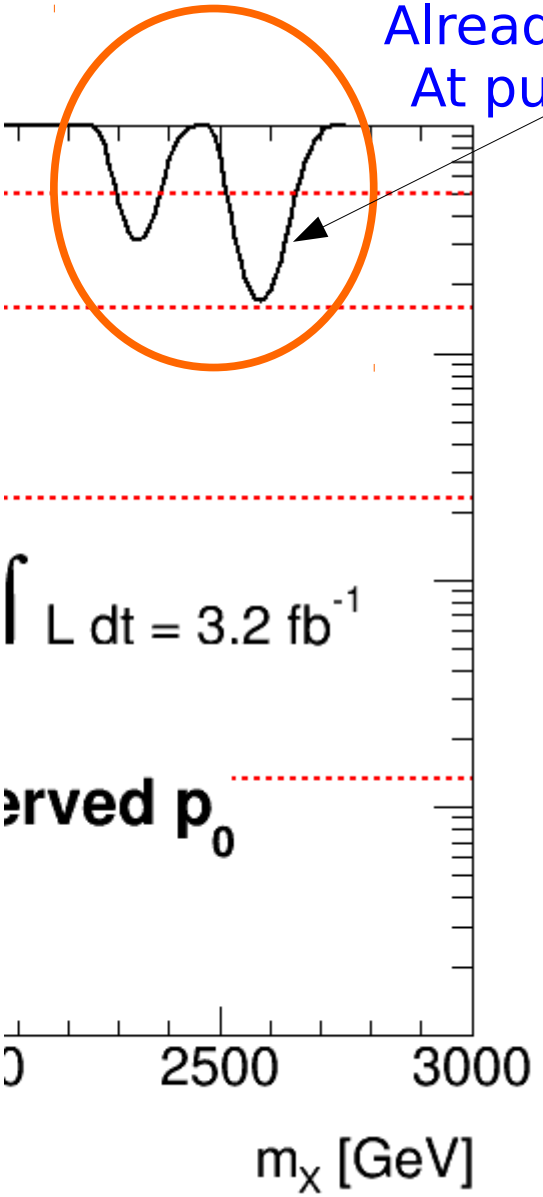
p0 scan without syst

Larger data excess @ 2.6TeV
p0 peak is higher and broader

Removing all systematic uncertainties
scan p0

The peaks are fat, which means smaller
p0 values (larger significance)

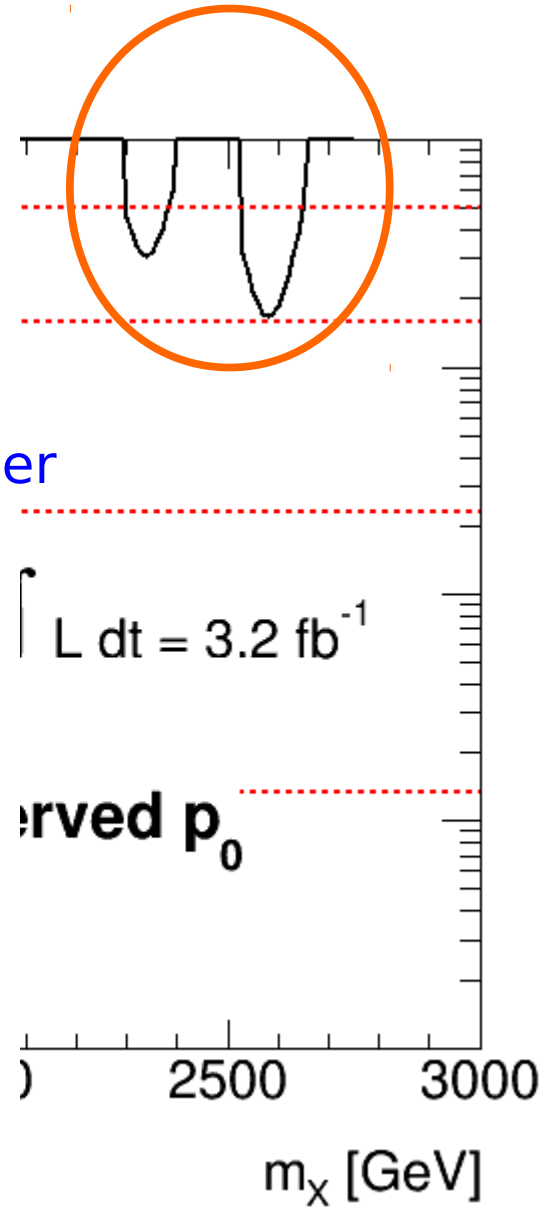




Remove JES only

Keep all syst and remove JES only
(all Rtrk_baseline, Rtrk_model, Rtrk_track)

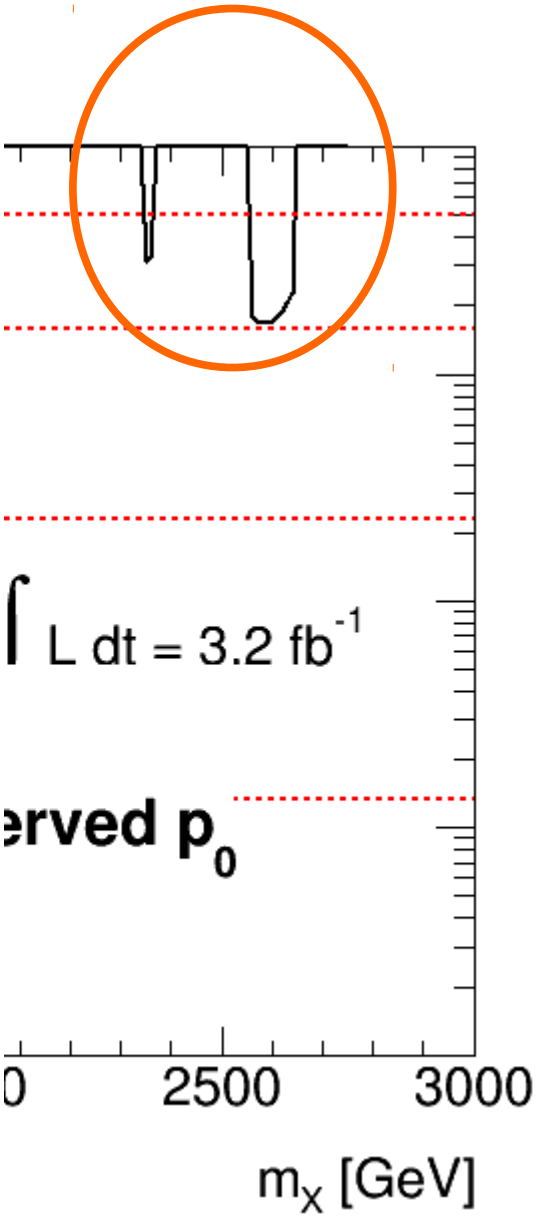
The peaks get narrower, which means larger p0 values (less significance), because uncertainties get in and degrade the sensitivities



Add back JES

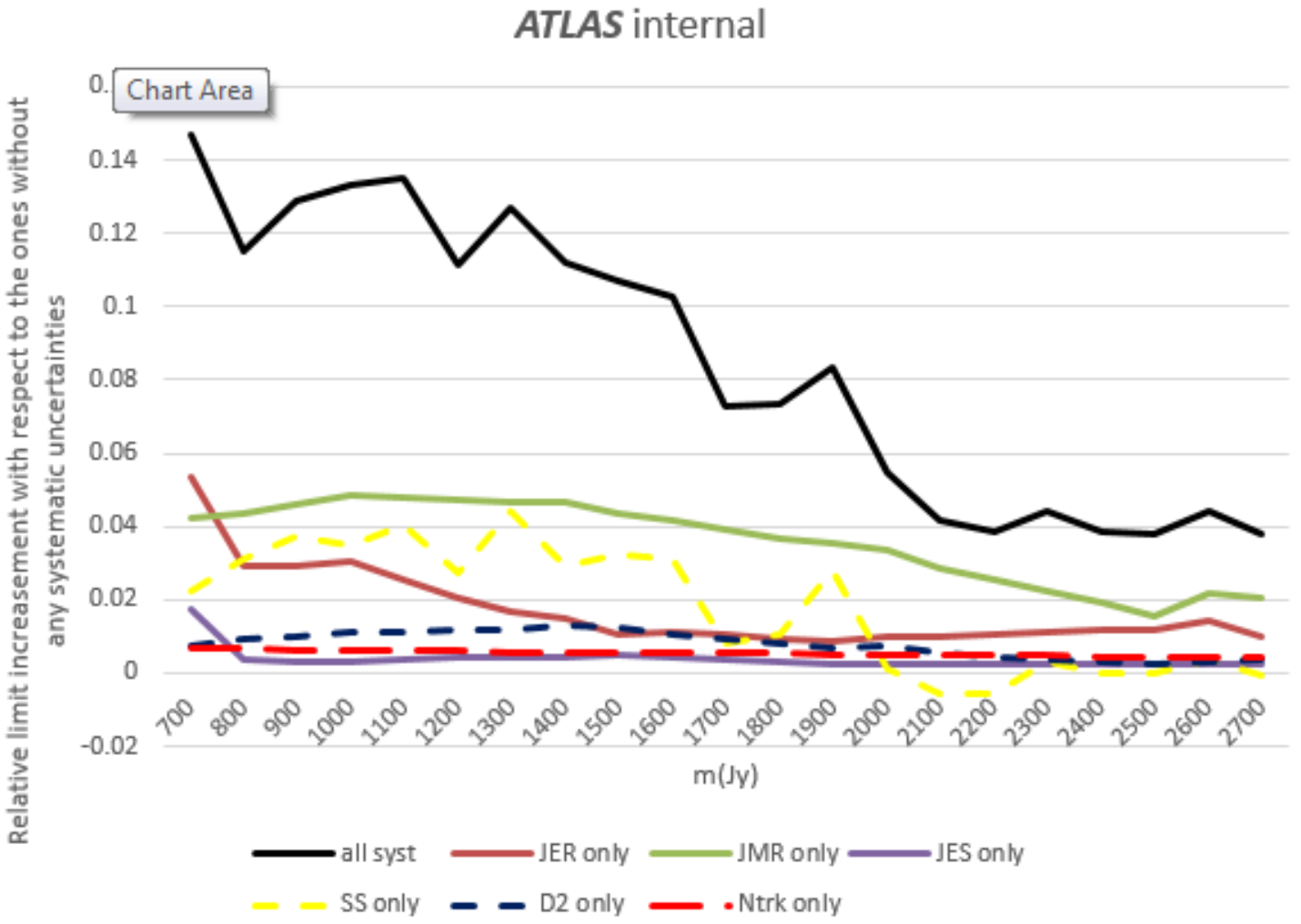
Add Rtrk_baseline Rtrk_model Rtrk_track
Now all systs are in place

Peaks are even more narrower due to
Large uncertainties on JES



Check with Ntrk unc

Add a limit curve in red, for introducing only uncertainty due to Ntrk
The impact is less than 1% on the expected limits for all masses



Mass	in terms of expected limits
700	0.006848
800	0.006515
900	0.006482
1000	0.006361
1100	0.00621
1200	0.006038
1300	0.005861
1400	0.005686
1500	0.005653
1600	0.005515
1700	0.005381
1800	0.005243
1900	0.005112
2000	0.004979
2100	0.004949
2200	0.004831
2300	0.004706
2400	0.004586
2500	0.004472
2600	0.00435
2700	0.004397

Backup

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