

Department of Physics, Shandong University

Weekly meeting

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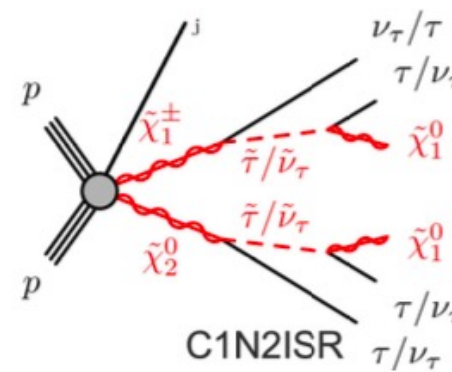


Pre-selection

Selection

- lep-had
channel: $n\text{Taus} \geq 1; n\text{Leps} \geq 1$
- had-had
channel: $n\text{Taus} \geq 2; n\text{Leps} = 0$
- $\text{MET} \geq 200$; pass MET trigger
- $1 \leq n\text{BaseJet} \leq 8$
- b-veto
- OS

Both data and bkg are sourced from run2(1516, 17, 18).



CutCount: HH

Pt_lep <= 24

Pt_tau <= 32

METsig >= 12

Mll <= 22

Mt_tau <= 32

MT2_50 <= 58

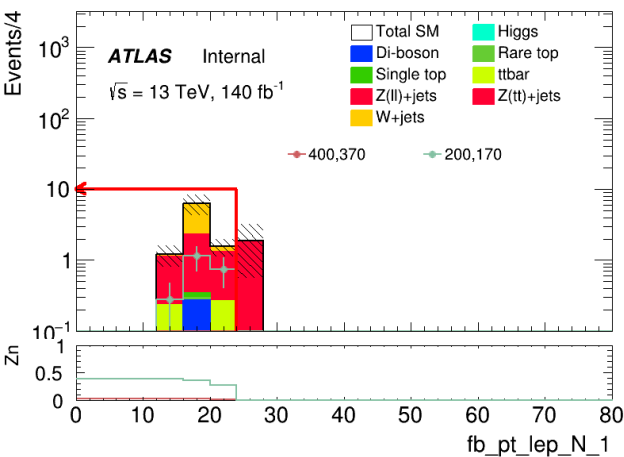
dPhit1x >= 0.4

Wjets and Zjets
dominate bkg

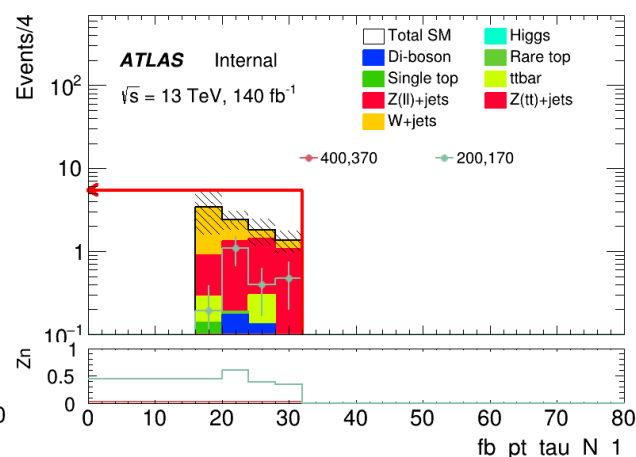
Inefficient cut

Cut name	baseline	fb_pt_lep <= 30	fb_pt_tau <= 38	fb_METsig >= 12	fb_Mll <= 22	fb_mt_tau <= 34	fb_MT2_50 <= 58	fb_dPhit1x >= 0.4	The end
Wjets_run2	2132.6588 +- 54.6388	1784.7287 +- 50.8222	1784.7287 +- 50.8222	740.7584 +- 29.5633	42.0601 +- 6.3352	32.8378 +- 5.6684	12.1697 +- 3.7451	4.3782 +- 2.0078	4.3782 +- 2.0078
TopPair_run2	454.2589 +- 8.3510	320.9279 +- 7.0489	320.9279 +- 7.0489	123.2402 +- 4.3727	7.4847 +- 1.0742	5.2452 +- 0.9022	1.2503 +- 0.4424	0.3171 +- 0.2246	0.3171 +- 0.2246
SingleTop_run2	77.0567 +- 3.2781	52.8878 +- 2.6837	52.8878 +- 2.6837	21.6107 +- 1.7724	0.6404 +- 0.2865	0.3746 +- 0.1843	0.0721 +- 0.0527	0.0455 +- 0.0455	0.0455 +- 0.0455
OtherTop_run2	6.0052 +- 0.2996	3.4669 +- 0.2378	3.4669 +- 0.2378	1.5168 +- 0.1607	0.1394 +- 0.0437	0.0776 +- 0.0331	0.0359 +- 0.0224	0.0184 +- 0.0184	0.0184 +- 0.0184
Zttjets_run2	1999.7600 +- 27.9605	880.2993 +- 14.8581	880.2993 +- 14.8581	172.5793 +- 7.3875	71.6749 +- 3.5473	31.0534 +- 2.4268	28.7386 +- 2.3946	6.0283 +- 1.4561	6.0283 +- 1.4561
Zlljets_run2	54.0160 +- 0.9576	22.5408 +- 0.6665	22.5408 +- 0.6665	6.0648 +- 0.3932	1.8151 +- 0.1966	0.9307 +- 0.1610	0.6432 +- 0.0975	0.1446 +- 0.0461	0.1446 +- 0.0461
VV_run2	395.6267 +- 3.3780	221.9120 +- 2.7950	221.9120 +- 2.7950	108.5380 +- 1.6924	7.5092 +- 0.3113	4.1508 +- 0.2335	1.9500 +- 0.1389	0.4645 +- 0.0650	0.4645 +- 0.0650
Higgs_run2	53.2621 +- 0.5430	14.4880 +- 0.3016	14.4880 +- 0.3016	3.2399 +- 0.1531	0.2052 +- 0.0454	0.1015 +- 0.0373	0.0934 +- 0.0365	0.0170 +- 0.0108	0.0170 +- 0.0108
dijet_run2	76.5004 +- 36.7775	28.0953 +- 15.1966	28.0953 +- 15.1966	0.0507 +- 0.0348	0.0000 +- 0.0000	0.0000 +- 0.0000	0.0000 +- 0.0000	0.0000 +- 0.0000	0.0000 +- 0.0000
bkg	5249.1448 +- 72.2009	3329.3467 +- 55.6767	3329.3467 +- 55.6767	1177.5987 +- 30.8852	131.5289 +- 7.3548	74.7716 +- 6.2410	44.9531 +- 4.4709	11.4137 +- 2.4922	11.4137 +- 2.4922
C1N2ISR_200p0_170p0_run2	58.6756 +- 3.1478	52.8749 +- 2.9884	52.8749 +- 2.9884	37.7340 +- 2.5435	19.7893 +- 1.8376	15.9772 +- 1.6582	5.8949 +- 0.9986	2.1683 +- 0.5906	2.1683 +- 0.5906
C1N2ISR_400p0_370p0_run2	5.2793 +- 0.3177	4.9043 +- 0.3049	4.9043 +- 0.3049	3.9185 +- 0.2723	1.9208 +- 0.1907	1.5771 +- 0.1739	0.5462 +- 0.0970	0.1691 +- 0.0515	0.1691 +- 0.0515

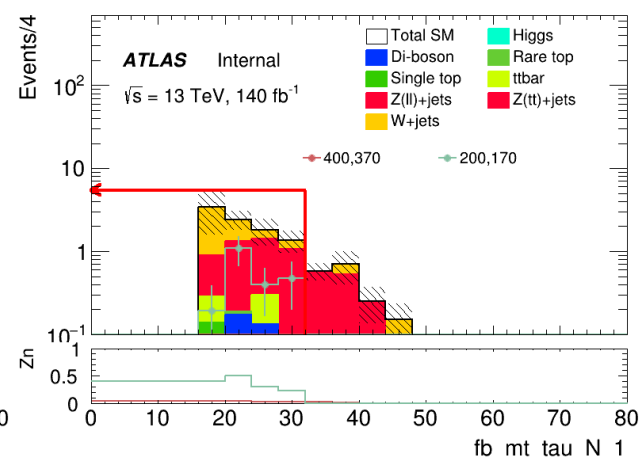
N-1 plot: HH



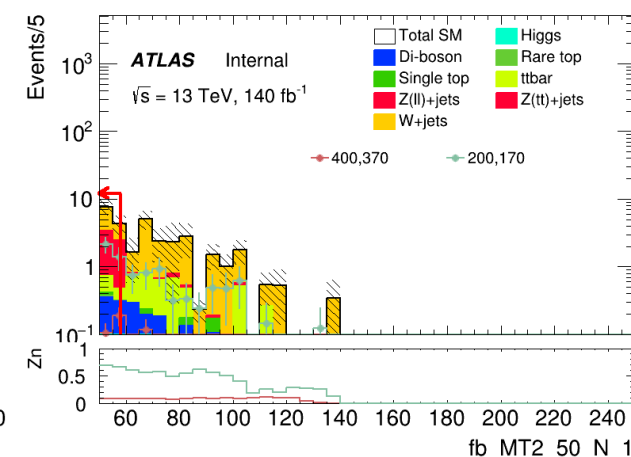
Pt_{lep} ≤ 24



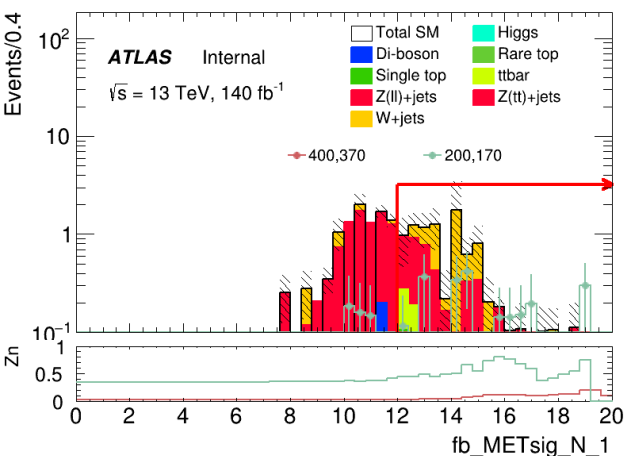
Pt_{tau} ≤ 32



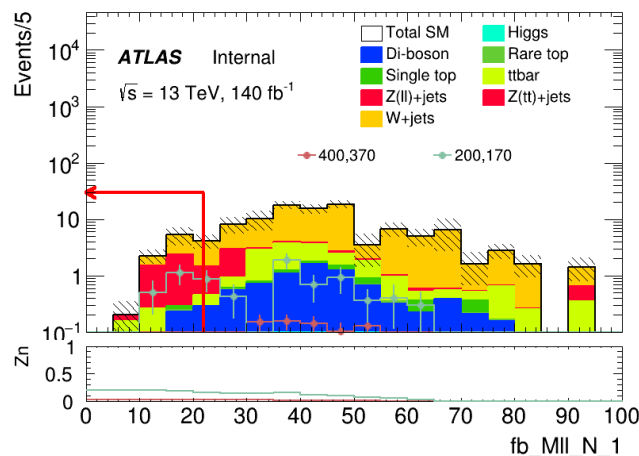
Mt_{tau} ≤ 32



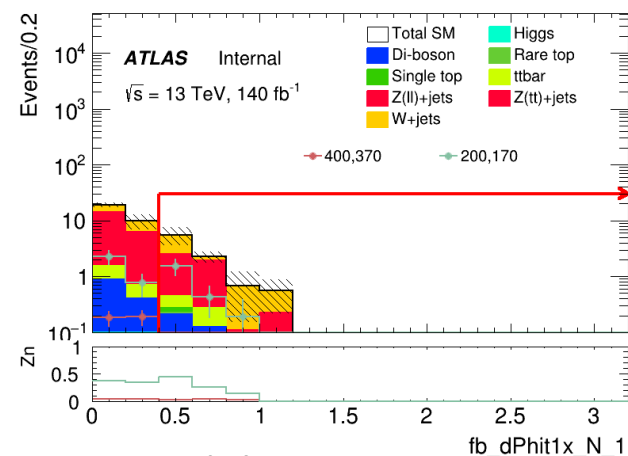
MT_{2_50} ≤ 58



METsig ≥ 12



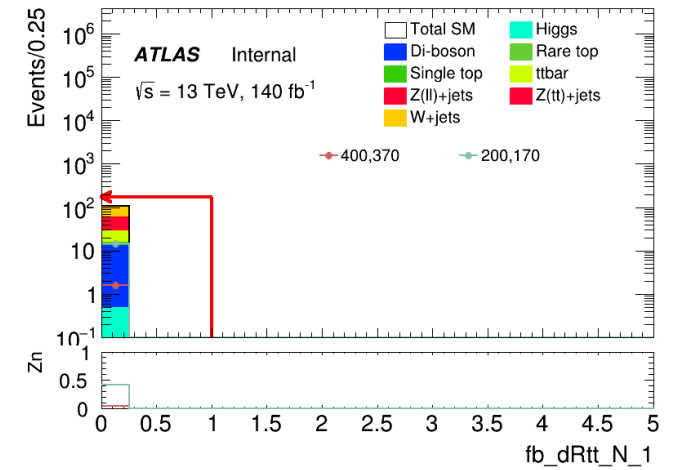
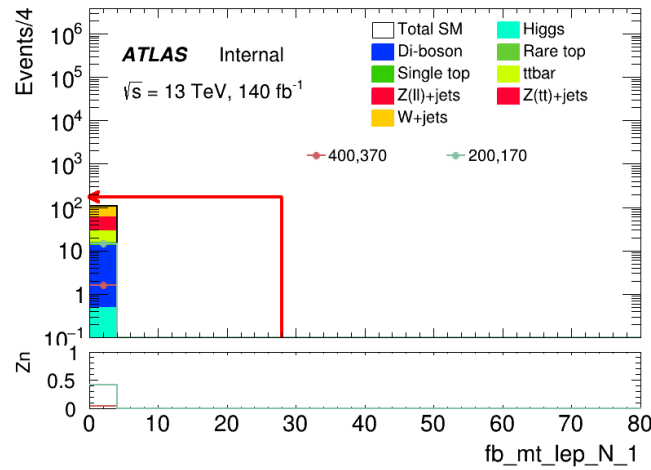
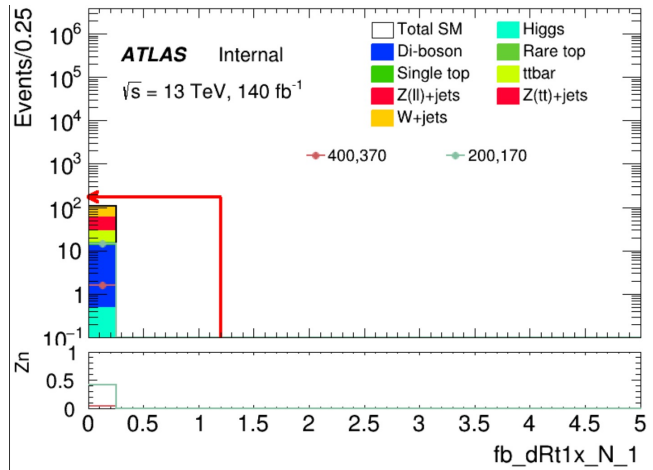
M_{ll} ≤ 22



dPhit1x ≥ 0.4

CutCount: LH

LH channel still have some problems, so I did not put result here



all bkg and sig contralize in the first bin