

Department of Physics, Shandong University

# Weekly meeting

**Chengxin Liao**  
[liaocx@ihep.ac.cn](mailto:liaocx@ihep.ac.cn)

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# CutCount: HH

Pt\_lep: {30, 35, 40, 45, 50, 55, 60}, '<'  
 Pt\_tau: {30, 35, 40, 45, 50, 55, 60}, '<'  
 METsig: {10, 15, 20, 25, 30, 35, 40, 45}, '>'  
 Mll: {10, 20, 30, 40, 50}, '>'  
 Mt\_lep: {25, 30, 35, 40, 45, 50, 55}, '<'  
 Mt\_tau: {25, 30, 35, 40, 45, 50, 55}, '<'  
 MT2\_50: {60, 65, 70, 75, 80, 85, 90}, '>'  
 dRt1x: {1.0, 1.2, 1.4, 1.6}, '<'  
 dRtt: {0.7, 0.9, 1.1, 1.3}, '<'



Pt\_lep <= 55  
 Pt\_tau <= 45  
 METsig >= 10  
 Mll >= 10  
 Mt\_lep <= 55  
 Mt\_tau <= 55  
 MT2\_50 > 60  
 dRt1x <= 1.4  
 dRtt <= 0.9

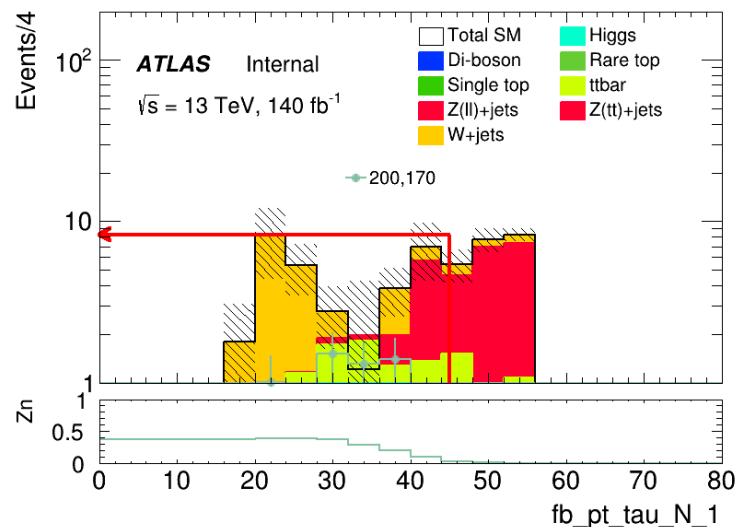
Highlight row is the cut I choose

Sig: C1N2\_200p0\_170p0

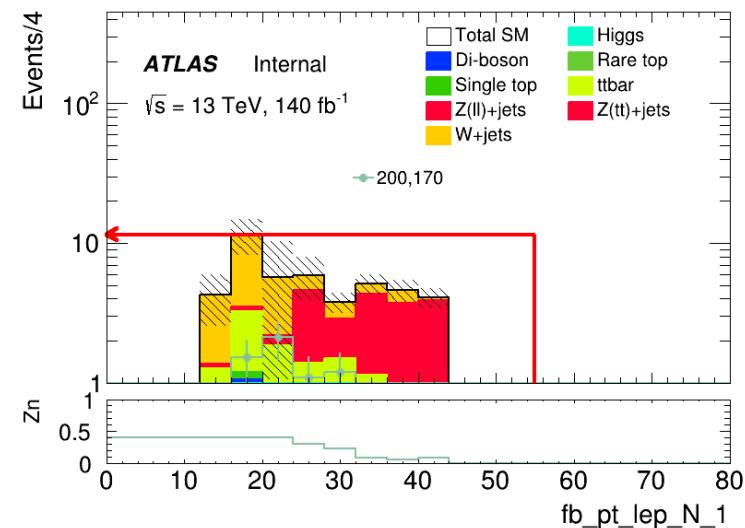
```
[chengxinliao@lxlogin002 chengxinliao]$ py showZn.py cutResults.csv
```

	Zn	Signal	totalBkg	fb_pt_lep	fb_pt_tau	fb_METsig	fb_Mll	fb_mt_lep	fb_mt_tau	fb_MT2_50	fb_dRt1x	fb_dRtt
11942	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	45	50	10	10	50	45	60	1.4	0.9
14178	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	45	65	10	10	55	45	60	1.4	0.9
28674	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	65	45	10	10	55	55	60	1.4	0.9
15577	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	50	45	10	10	45	50	60	1.4	0.9
19946	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	55	45	10	10	50	45	60	1.4	0.9
11362	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	45	45	10	10	50	50	60	1.4	0.9
22694	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	55	65	10	10	45	45	60	1.4	0.9
25632	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	60	55	10	10	55	45	60	1.4	0.9
26386	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	60	60	10	10	55	45	60	1.4	0.9
15681	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	50	45	10	10	55	50	60	1.4	0.9
22753	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	55	65	10	10	50	45	60	1.4	0.9
20022	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	55	45	10	10	55	55	60	1.4	0.9
11350	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	45	45	10	10	50	45	60	1.4	0.9
11998	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	45	50	10	10	55	45	60	1.4	0.9
20482	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	55	50	10	10	45	45	60	1.4	0.9
12653	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	45	55	10	10	50	45	60	1.4	0.9
28622	0.506498	6.84231 +- 1.11364	31.6855 +- 6.30542(1402)	65	45	10	10	50	55	60	1.4	0.9

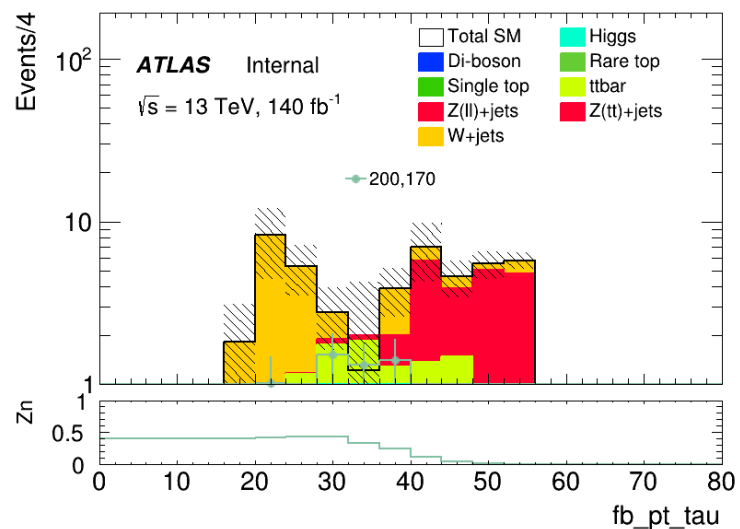
# N-1 HH\_plot: pt



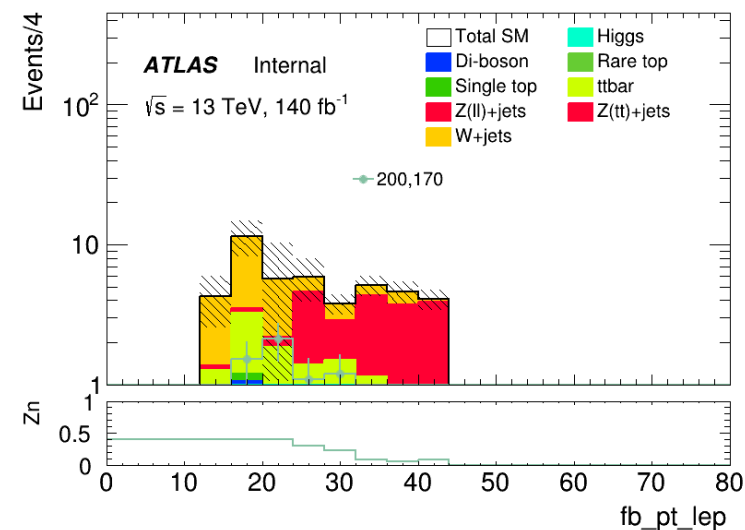
Pt\_lep <= 55



Pt\_tau <= 45

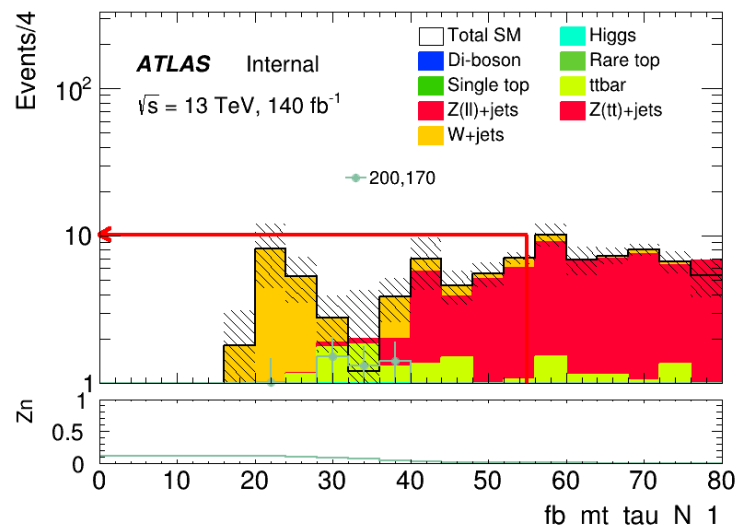


Pt\_Tau

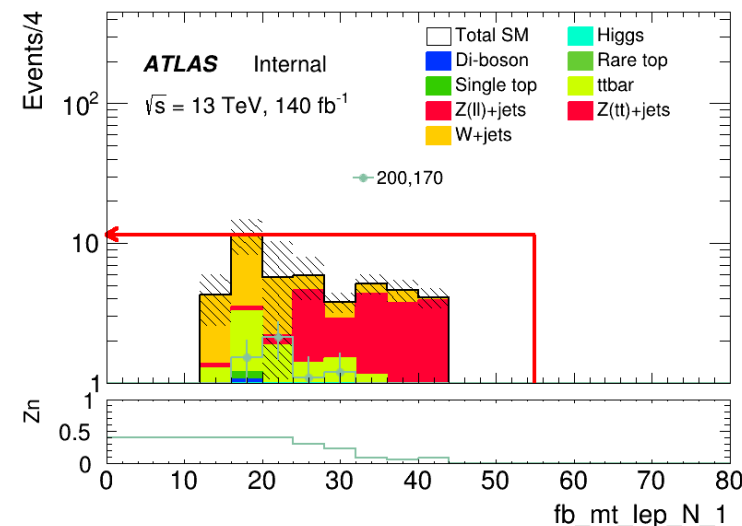


Pt\_Lep

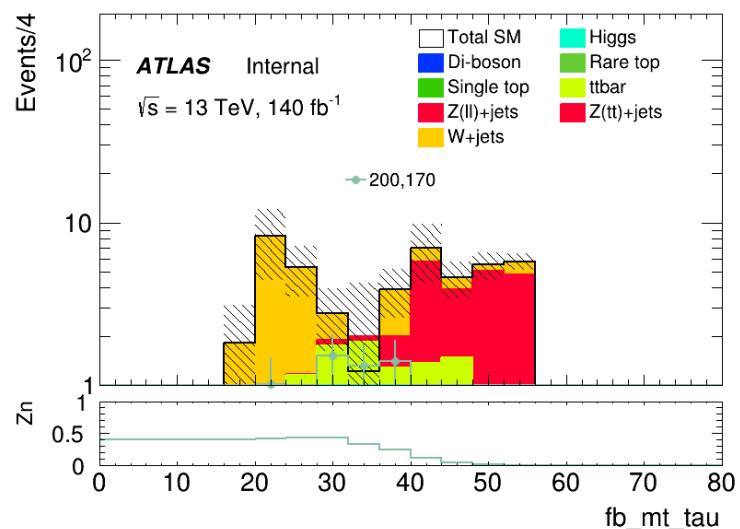
# N-1 HH\_plot: mt



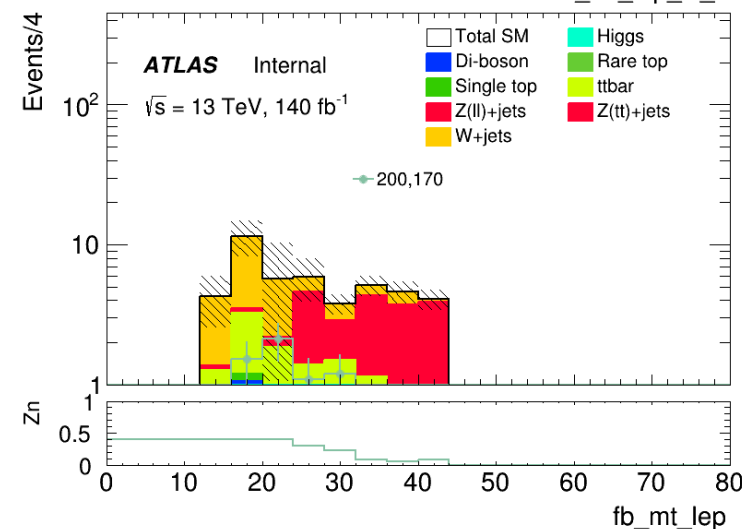
Mt\_lep <= 55



Mt\_tau <= 55

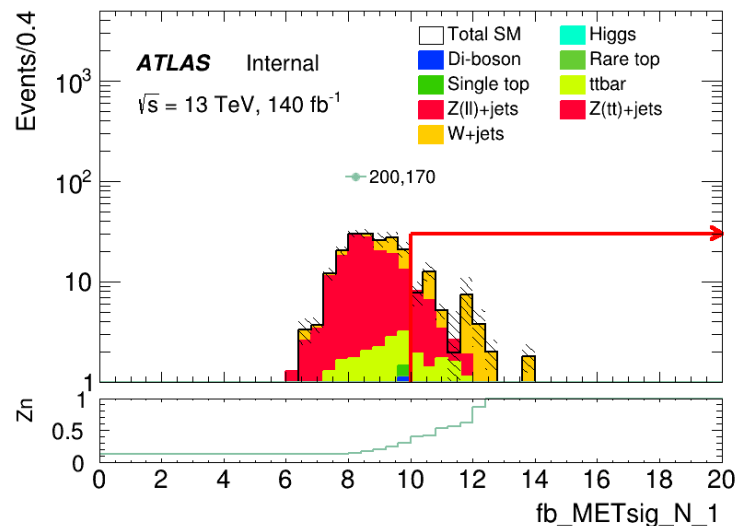


Mt\_Tau

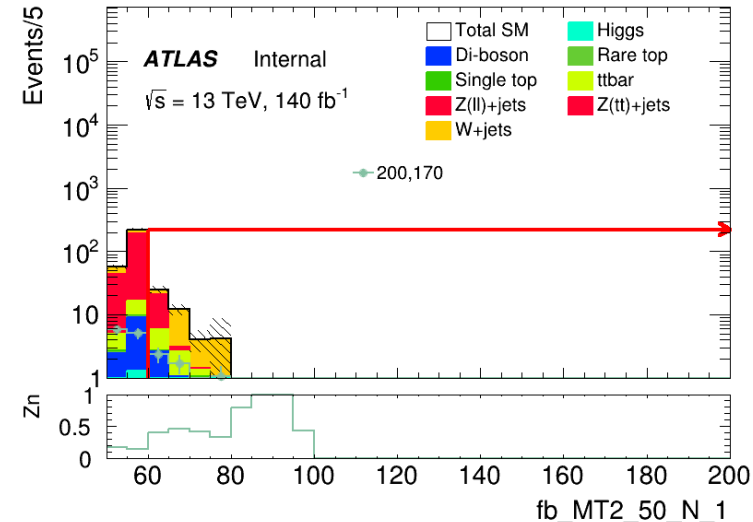


Mt\_Lep

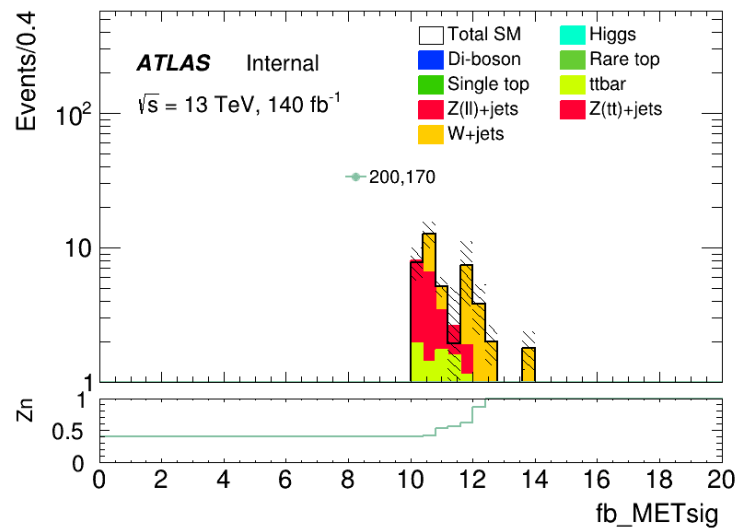
# N-1 HH\_plot: MT2&METsig



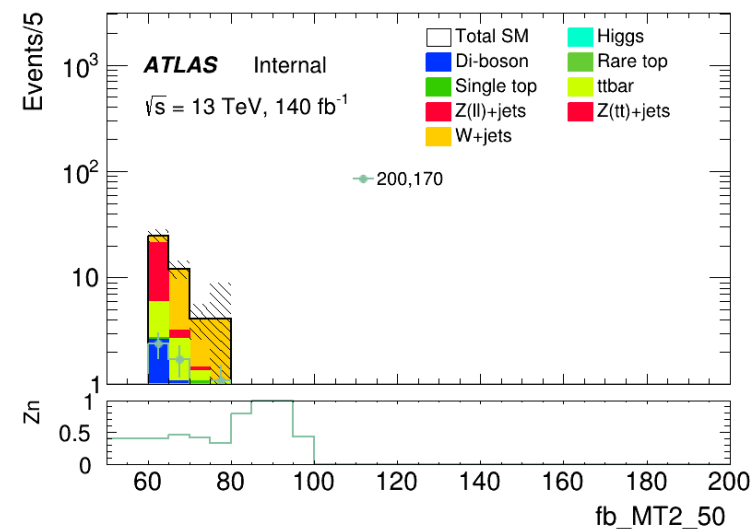
METsig  $\geq 10$



Mll  $\geq 10$

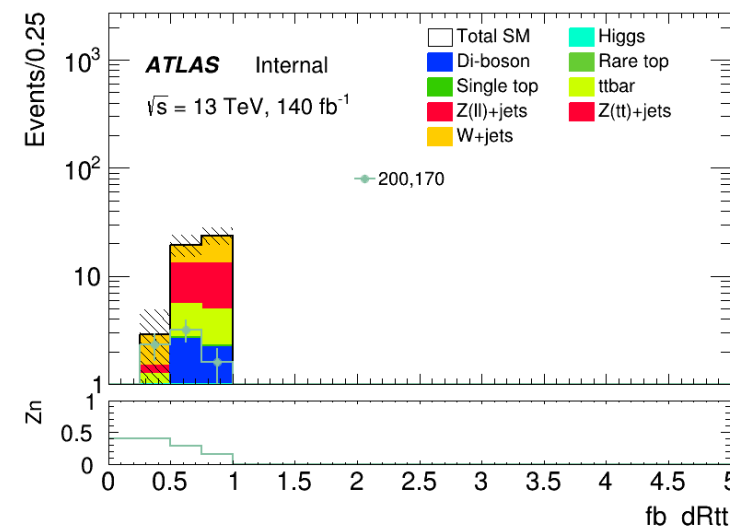
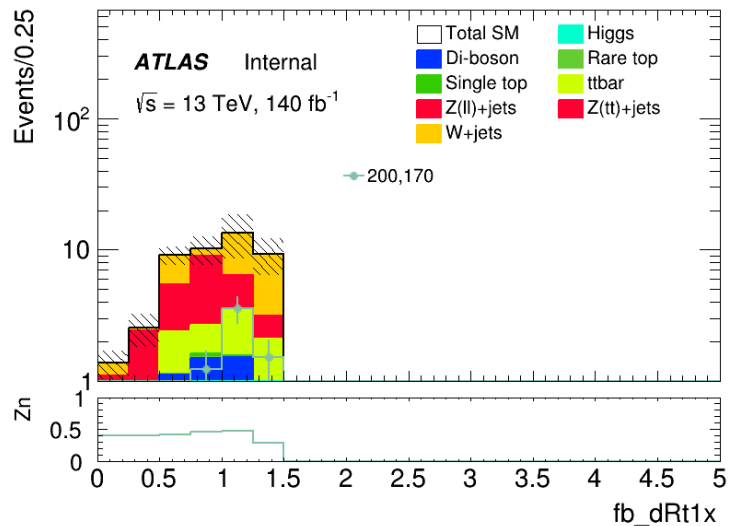
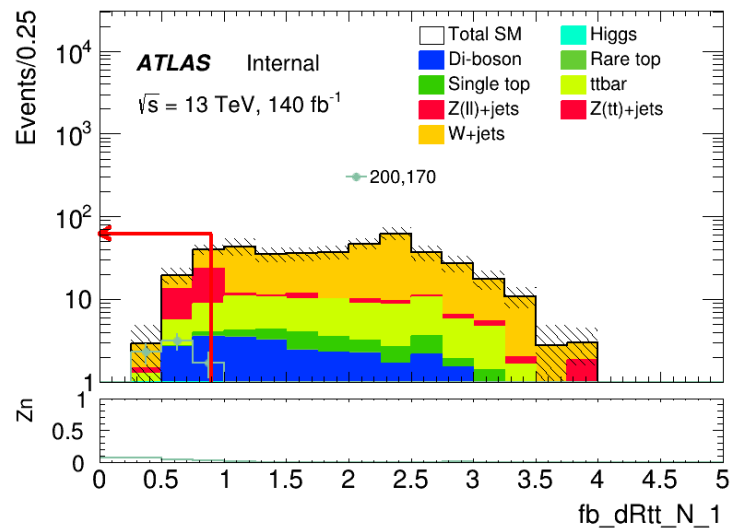
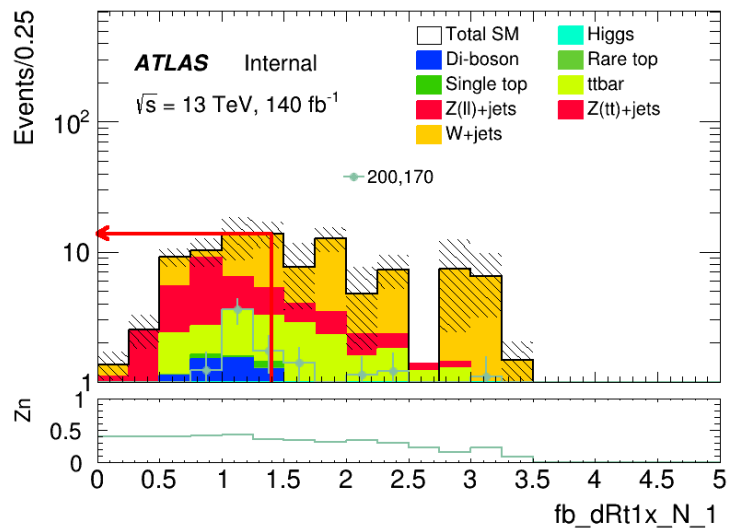


METsig



MT2

# N-1 HH\_plot: dR



dRt1x

dRt1x

# cutflow

## example

```
cutflow_Wjets_run2.csv buffers
1 Cut name, baseline, fb_pt_lep <= 55, fb_pt_tau <= 45, fb_METsig >= 10, fb_Mll >= 10, fb_mt_lep <= 55, fb_mt_tau <= 55, fb_MT2_50 >= 60, fb_dRt1x <= 1.4, fb_dRtt <= 0.9, The end
2 Wjets_run2, 6412.76288418979 +- 152.8804236216604, 6222.400748279824 +- 152.1999931678939, 6074.23611681593 +- 151.578249900057, 3175.994643125689 +- 131.6911202181734, 3003.724426787227 +- 85.52464623631
948, 3003.724426787227 +- 85.52464623631948, 2110.198542428952 +- 72.82666740713097, 852.8684413900315 +- 41.00425233860736, 293.5488544647083 +- 24.2450243111165, 18.50561530226222 +- 6.084728239057907, 18
.50561530226222 +- 6.084728239057907
```

Pt and Mt cut are too loose?