# Weekly meeting

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IHEP

2/9/2015

# Introduction

- Continue getting the upper limits of various sub-channels
- Updated the results of wwyy because of the new xml files.
- The results of bbyy are ok and have been showed last week.
- The results of bbbb are ok
- There are some problems in running bbtautau.

# wwyy

| Mass point | 260 | 300 | 350 | 400 | 500 | smhh |
|---|---|---|---|---|---|---|
| Upper limit | 10.8557 | 8.92967 | 7.50631 | 6.61605 | 5.6362 | 6.53016 |

resonant

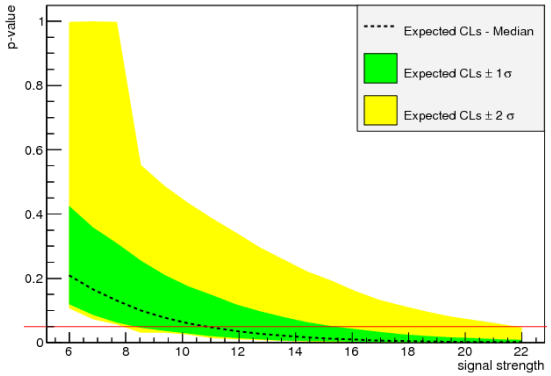
- double Median[nmass] = {10.8557, 8.92967, 7.50631, 6.61605, 5.6362};
- double P2S[nmass] = { 21.7998, 17.8776, 15.137, 13.301, 11.3682};
- double P1S[nmass] = {15.3726, 12.6355, 10.658, 9.39486, 8.09175};
- double N1S[nmass] = {8.33472, 6.86803, 5.81079, 5.12704, 4.39592};
- double N2S[nmass] = { 7.89317,6.48935,5.53279,4.94406,4.20521};

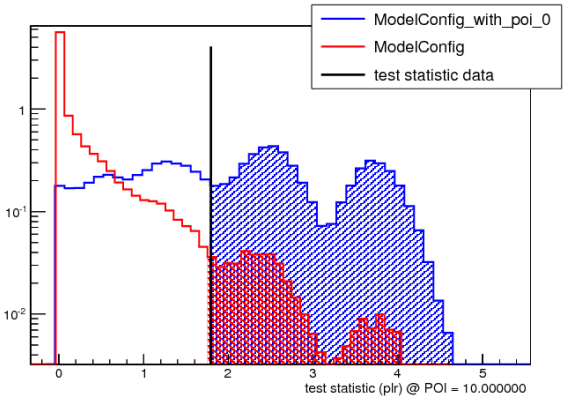
smhh

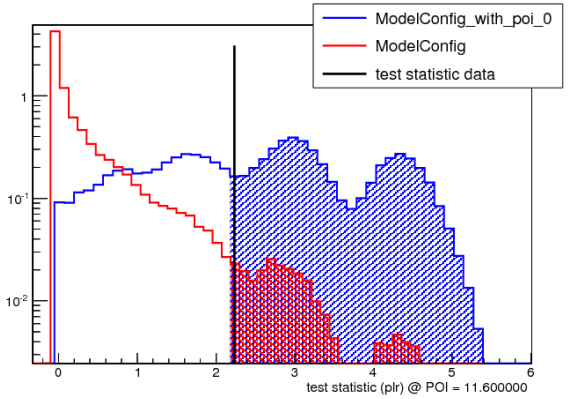
- expected limit (+2 sig) 13.0728
- expected limit (+1 sig) 9.23444
- expected limit (median) 6.53016
- expected limit (-1 sig) 5.07175
- expected limit (-2 sig) 4.87975

# wwyy

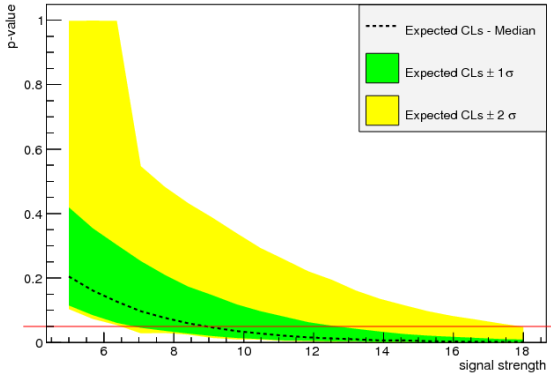
Mh260

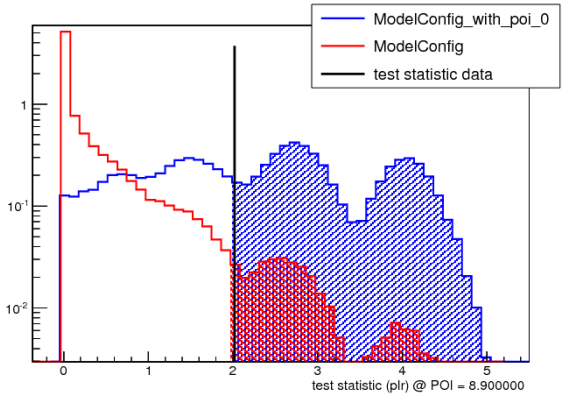


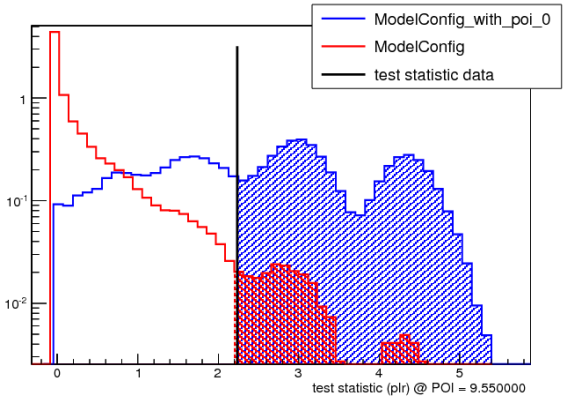




Mh300

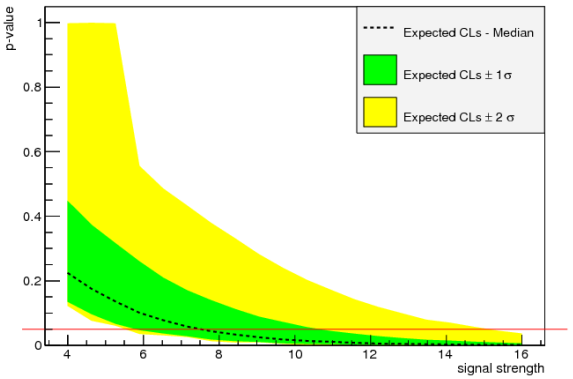


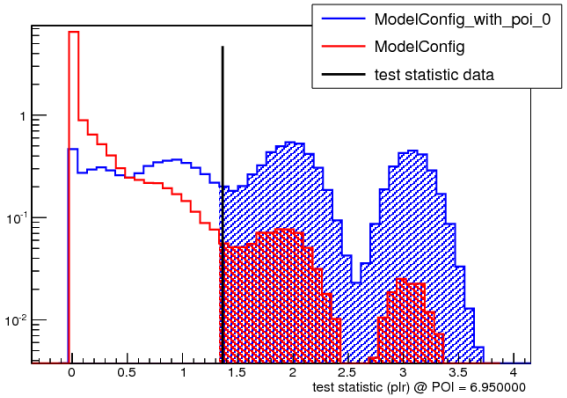



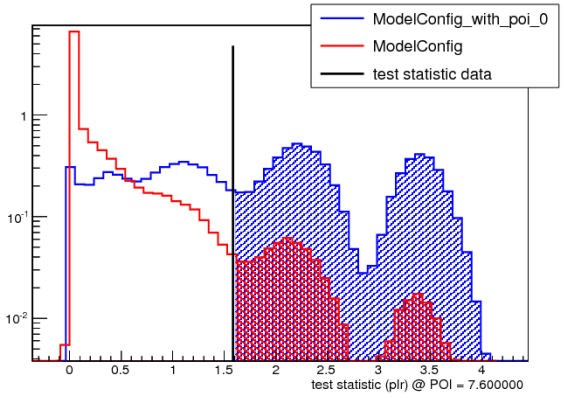



# wwyy

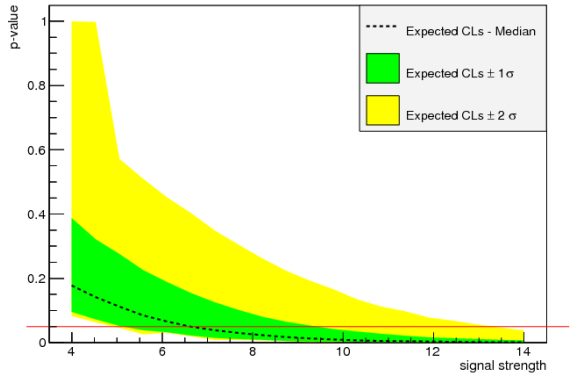
Mh350

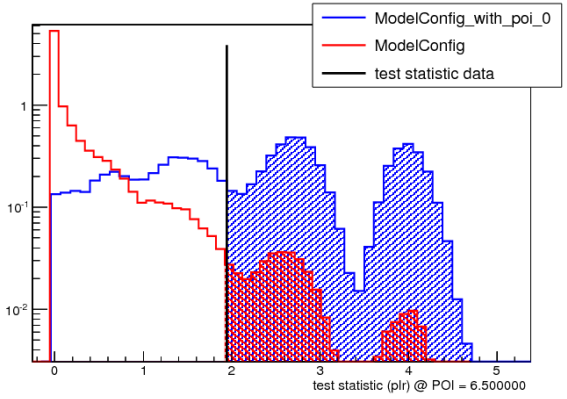


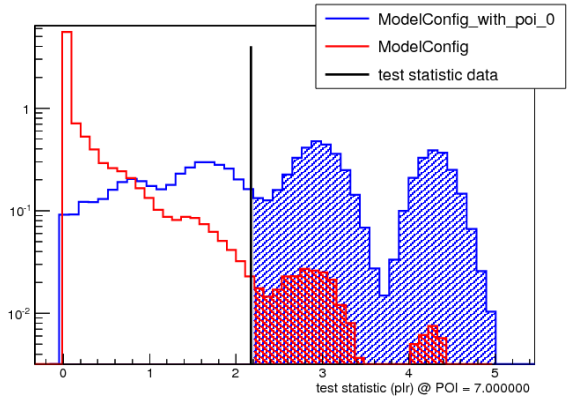




Mh400

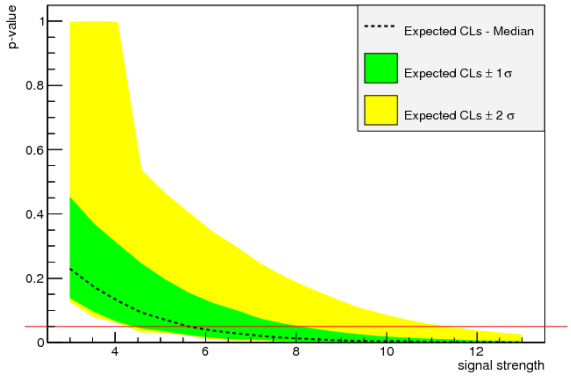


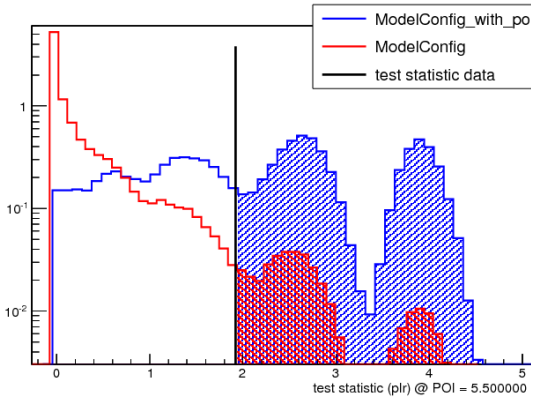



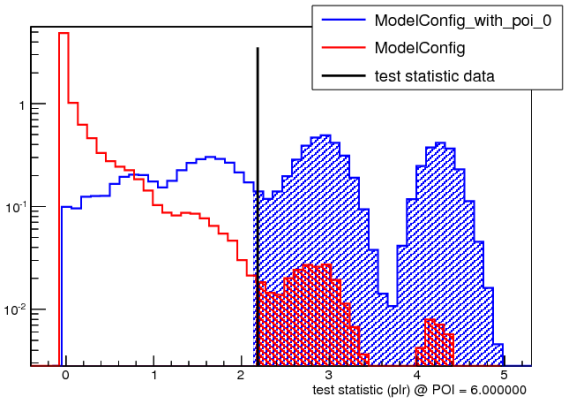



# wwyy

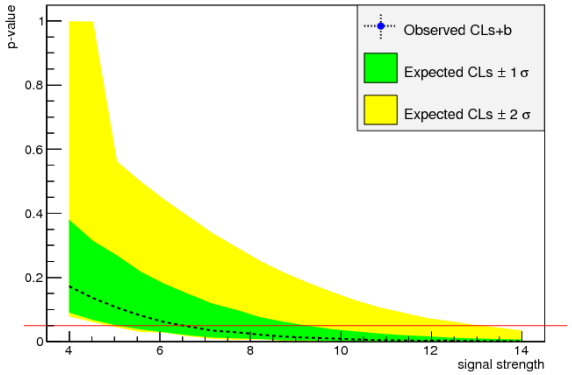
Mh500

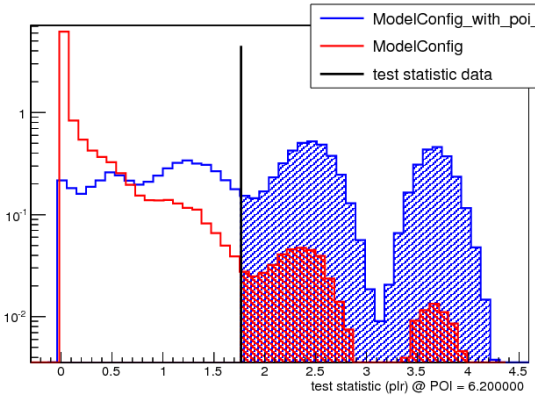


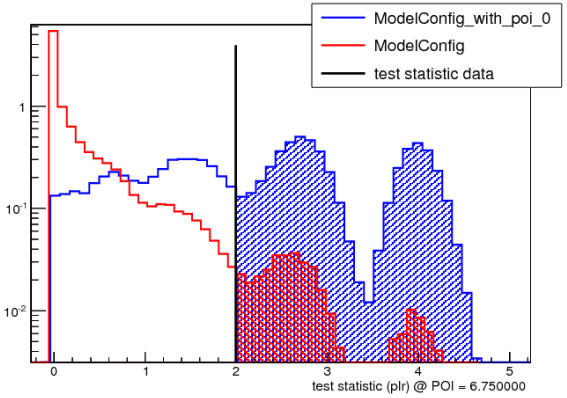




smhh



# bbbb

| Mass point | 500 | 800 | 1000 | smhh |
|---|---|---|---|---|
| Upper limits | 0.17145 | 0.0295566 | 0.0300889 | 0.61595 |

resonant

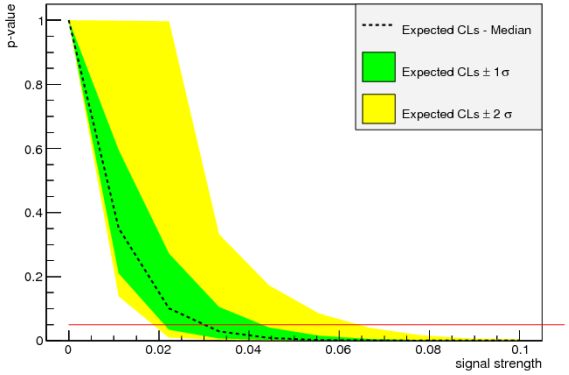
- double Median[nmass] = { 0.17145,0.0295566,0.0300889 };
- double P2S[nmass] = { 0.387813, 0.0637426, 0.064221 };
- double P1S[nmass] = { 0.257134, 0.042939, 0.042934 };
- double N1S[nmass] = { 0.114951, 0.0224528, 0.021249 };
- double N2S[nmass] = { 0.0965732, 0.0171563, 0.0187291 };

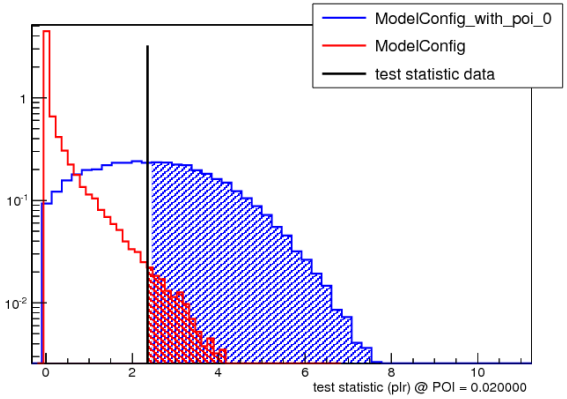
smhh

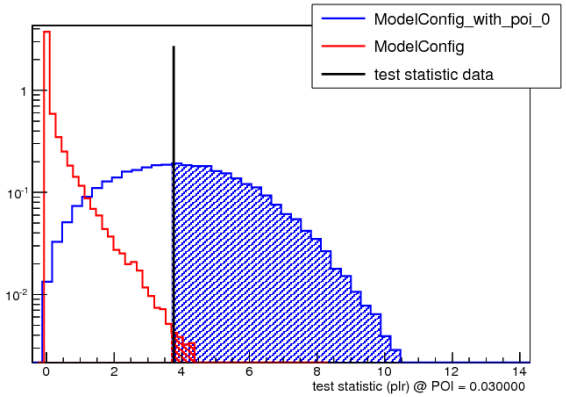
- expected limit (+2 sig) 1.24855
- expected limit (+1 sig) 0.879152
- expected limit (median) 0.61595
- expected limit (-1 sig) 0.449316
- expected limit (-2 sig) 0.331269

# bbbb

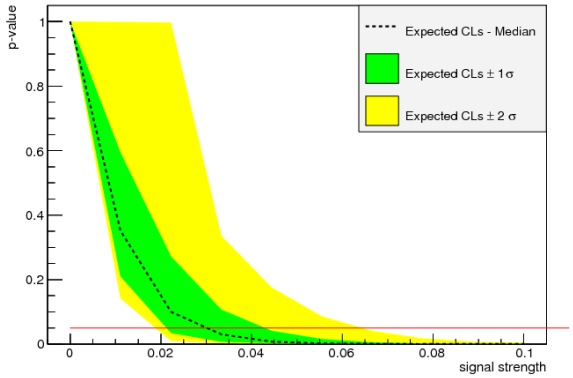
Mh1000

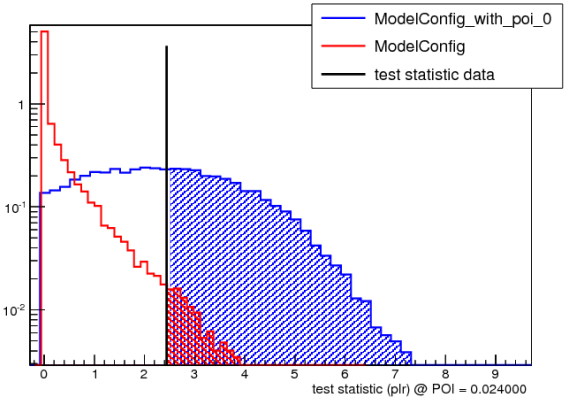


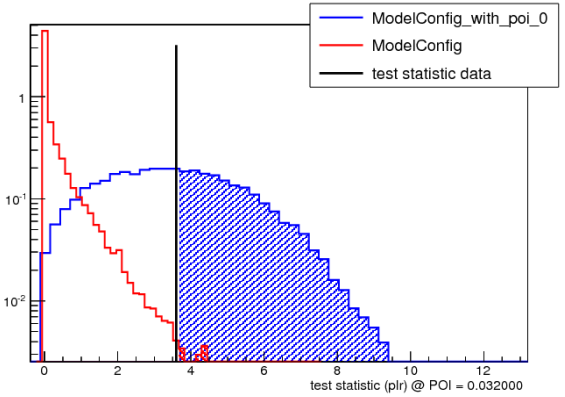




Mh800

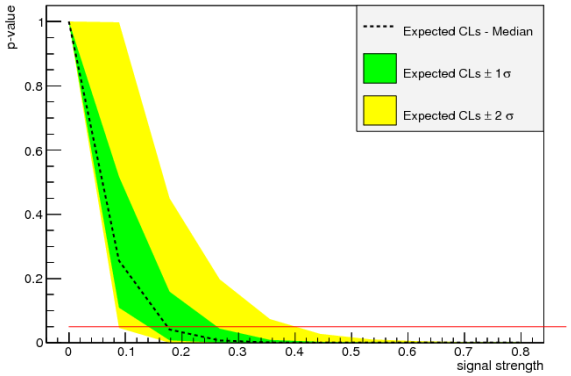


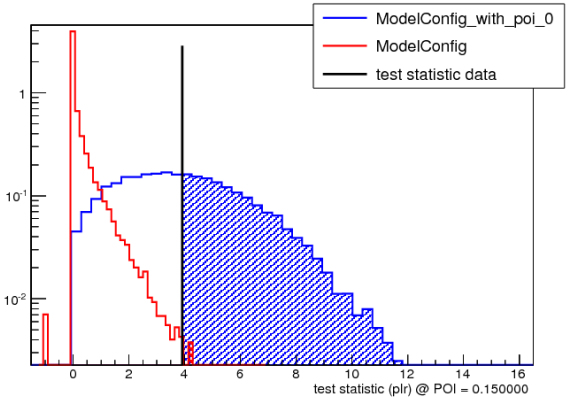



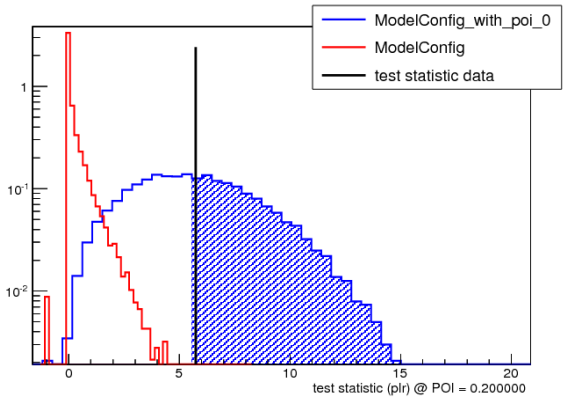



# bbbb

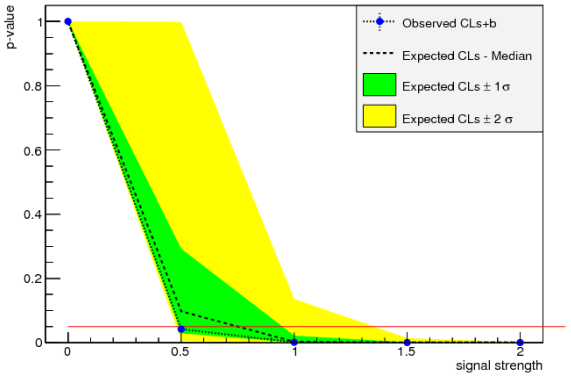
Mh500

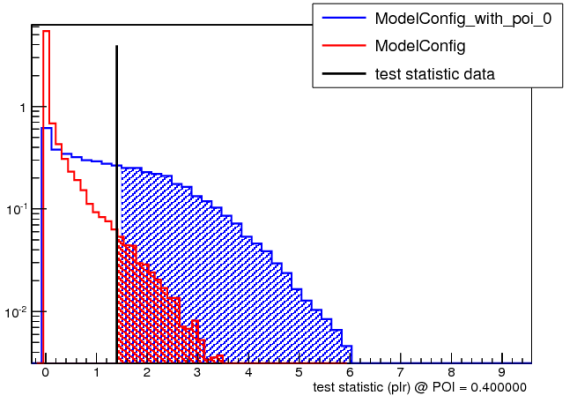


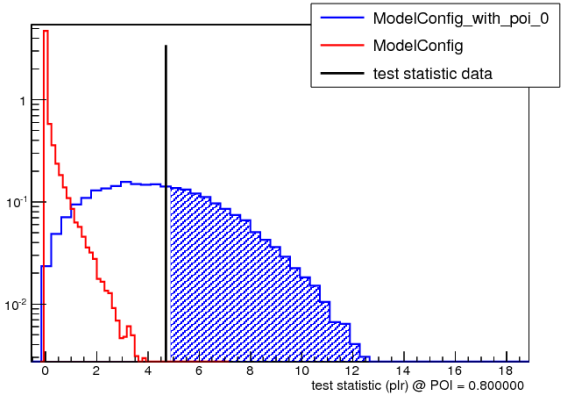




SMHH

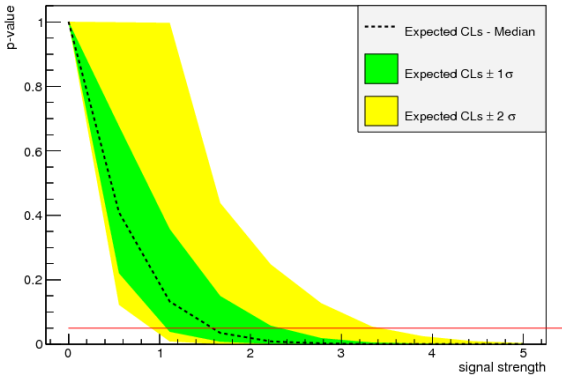


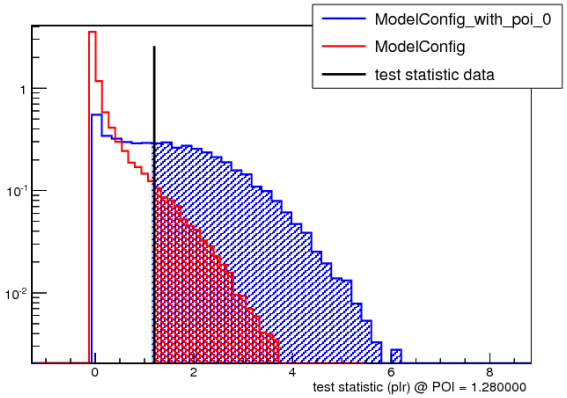



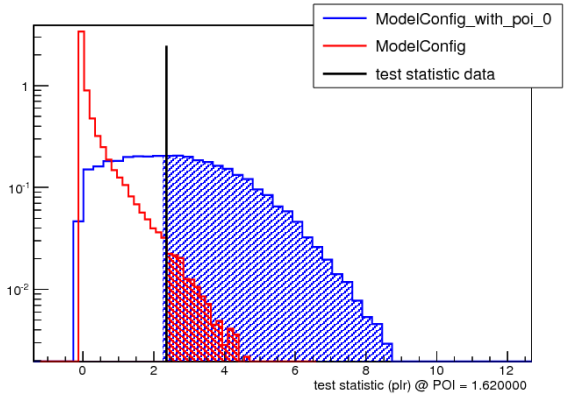



# bbtautau

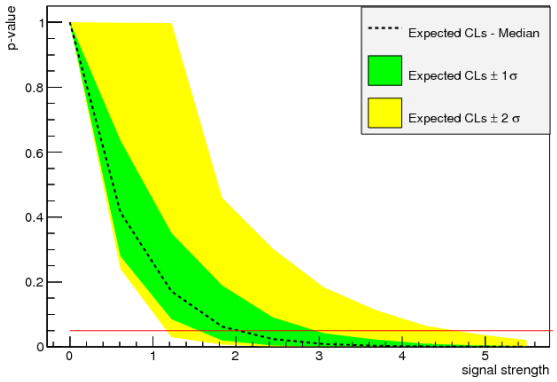
smhh

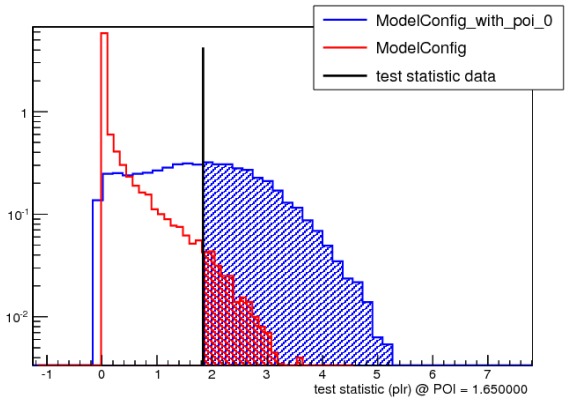


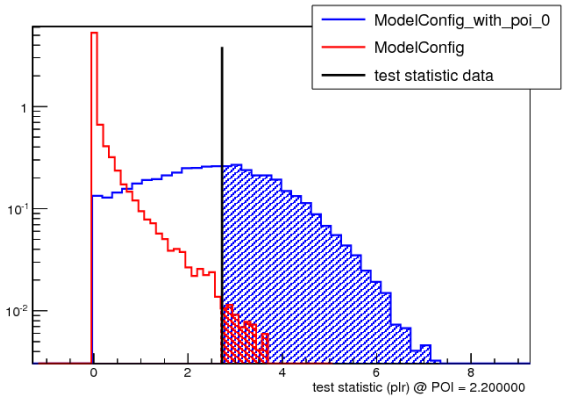




Mh260

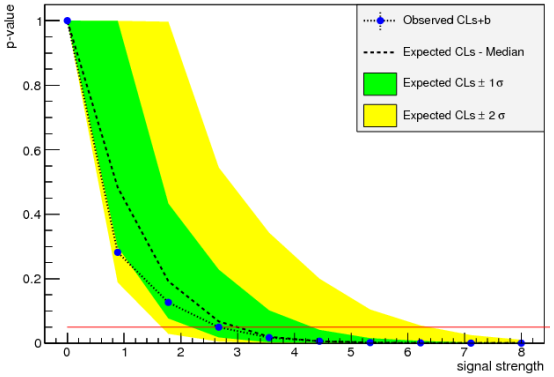


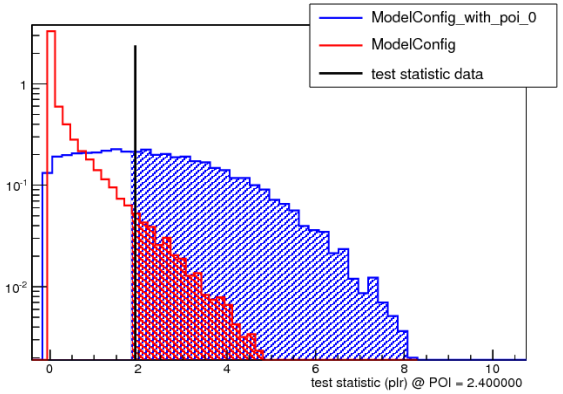



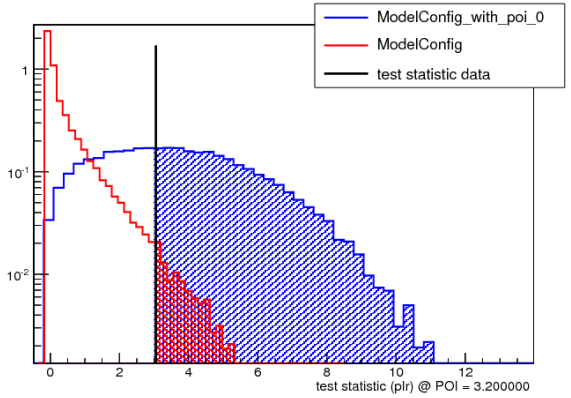



# bbtautau

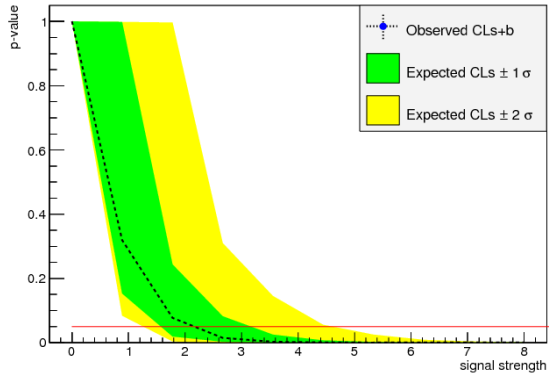
Mh300

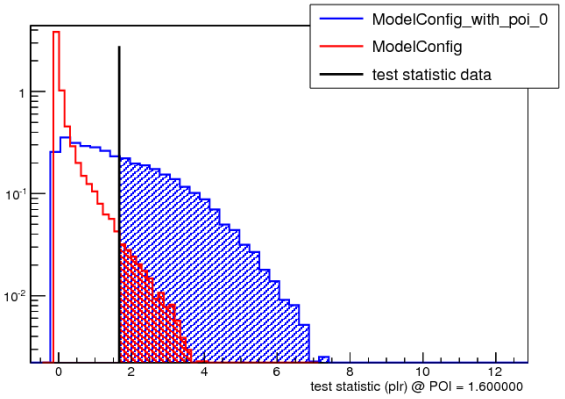


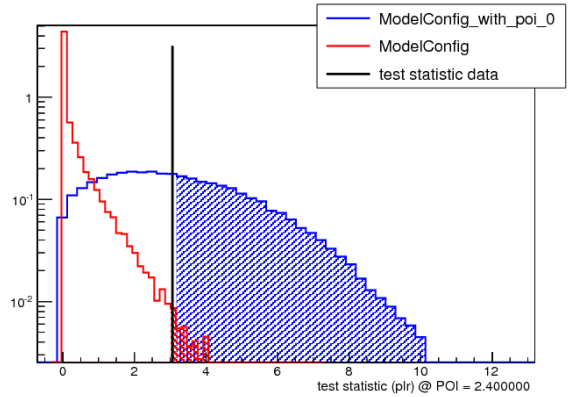




Mh350

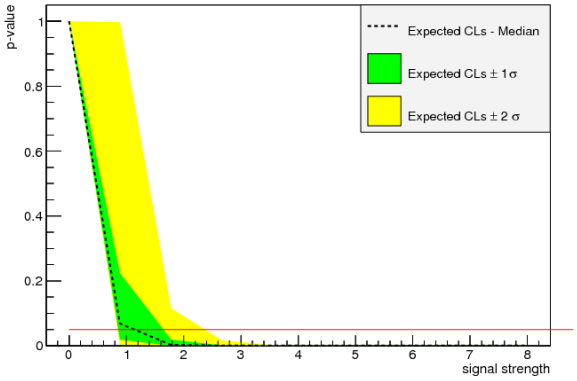


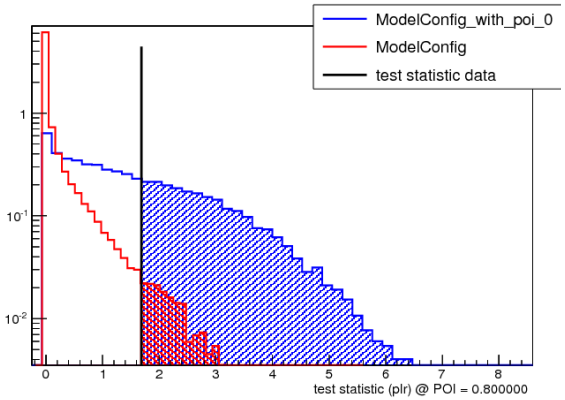



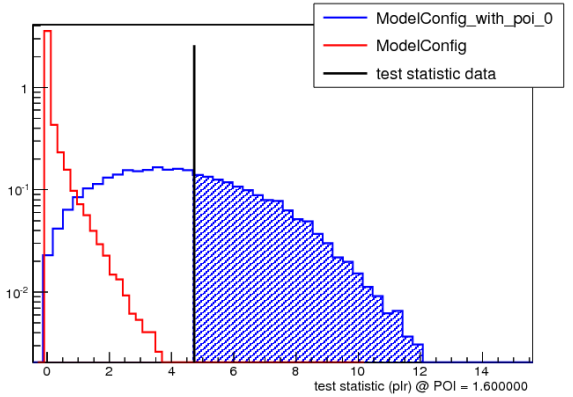



# bbtautau

Mh400



# Summary

- The results of bbbb at mass 800, the scanning region is not consistent with what it has been set up.
- the number of root files of bbtautau at mass 260 is only 70. More root files are needed before merging them.
- Do not get good results of 400, 500, 800, 1000 at bbtautau sub-channel.

# Backup

# wwyy

**mH260(20,6-22,100k)**

- expected limit (+2 sig) 21.7998
- expected limit (+1 sig) 15.3726
- expected limit (median) 10.8557
- expected limit (-1 sig) 8.33472
- expected limit (-2 sig) 7.89317

**mH300(20,5-18,100k)**

- expected limit (+2 sig) 17.8776
- expected limit (+1 sig) 12.6355
- expected limit (median) 8.92967
- expected limit (-1 sig) 6.86803
- expected limit (-2 sig) 6.48935

# wwyy

**mH350(20,4-15,100k)**

- expected limit (+2 sig) 15.137
- expected limit (+1 sig) 10.658
- expected limit (median) 7.50631
- expected limit (-1 sig) 5.81079
- expected limit (-2 sig) 5.53279

**mH400(20,4-14,100k)**

- expected limit (+2 sig) 13.301
- expected limit (+1 sig) 9.39486
- expected limit (median) 6.61605
- expected limit (-1 sig) 5.12704
- expected limit (-2 sig) 4.94406

# wwyy

**mH500(20,3-13,100k)**

- expected limit (+2 sig) 11.3682
- expected limit (+1 sig) 8.09175
- expected limit (median) 5.6362
- expected limit (-1 sig) 4.39592
- expected limit (-2 sig) 4.20521

**smhh(20,4-14,100k)**

- expected limit (+2 sig) 13.0728
- expected limit (+1 sig) 9.23444
- expected limit (median) 6.53016
- expected limit (-1 sig) 5.07175
- expected limit (-2 sig) 4.87975

# bbbb

**bbbb_m1000(10,0-0.1,50k,195)**

- expected limit (+2 sig) 0.064221
- expected limit (+1 sig) 0.042934
- expected limit (median) 0.0300889
- expected limit (-1 sig) 0.021249
- expected limit (-2 sig) 0.0187291

**bbbb_m800_2(10,0-0.08,50k,149)**

- expected limit (+2 sig) 0.0637426
- expected limit (+1 sig) 0.042939
- expected limit (median) 0.0295566
- expected limit (-1 sig) 0.0224528
- expected limit (-2 sig) 0.0171563

# bbbb

**Bbbb_m500_2(10,0-0.5,50k,149)**

- expected limit (+2 sig) 0.387813
- expected limit (+1 sig) 0.257134
- expected limit (median) 0.17145
- expected limit (-1 sig) 0.114951
- expected limit (-2 sig) 0.0965732

**Bbbb_SMHH_2(10,0-1.5,50k,140)**

- expected limit (+2 sig) 1.24855
- expected limit (+1 sig) 0.879152
- expected limit (median) 0.61595
- expected limit (-1 sig) 0.449316
- expected limit (-2 sig) 0.331269

# bbtautau

**smhh(10,0-5,50k)**

- expected limit (+2 sig) 3.4227
- expected limit (+1 sig) 2.32696
- expected limit (median) 1.58186
- expected limit (-1 sig) 1.07707
- expected limit (-2 sig) 0.910151

**260(10,0-5.5,50k,70)**

- expected limit (+2 sig) 4.62738
- expected limit (+1 sig) 2.95832
- expected limit (median) 2.03511
- expected limit (-1 sig) 1.55116
- expected limit (-2 sig) 1.16419

# bbtautau

**300(10,0-8,50k,108)**

- It is ok
- expected limit (+2 sig) 6.35916
- expected limit (+1 sig) 4.31226
- expected limit (median) 2.9942
- expected limit (-1 sig) 2.18677
- expected limit (-2 sig) 1.66353

**350(10,0-8,50k,116)**

- 0-8 is ok. 0-6 is the best
- expected limit (+2 sig) 4.61556
- expected limit (+1 sig) 3.16161
- expected limit (median) 2.16241
- expected limit (-1 sig) 1.57058
- expected limit (-2 sig) 1.26634

# bbtautau

**400(10,0-3,50k,)**

- Re-submit it by using 0-3
- expected limit (+2 sig) 2.36662
- expected limit (+1 sig) 1.64298
- expected limit (median) 1.14049
- expected limit (-1 sig) 0.860646
- expected limit (-2 sig) 0.846867

**500(10,0-2,50k,)**

- Re-submit it by using 0-2
- expected limit (+2 sig) 1.52393
- expected limit (+1 sig) 0.871926
- expected limit (median) 0.848104
- expected limit (-1 sig) 0.845128
- expected limit (-2 sig) 0.844443

# bbtautau

**800(10, 0.6-1.4,50k,)**

- expected limit (+2 sig) 0.873051
- expected limit (+1 sig) 0.847265
- expected limit (median) 0.844552
- expected limit (-1 sig) 0.844443
- expected limit (-2 sig) 0.844443

**1000(10,0-3,50k,)**