

Some Numbers/Plots in HJJ channel

Jin Wang (IHEP)

2014-09-03 IHEP Weekly Meeting



Z+H->bb

1. ZH signal, others backgrounds
2. Events number shifts with different JER resolutuion
3. Scaled to 500 fb⁻¹

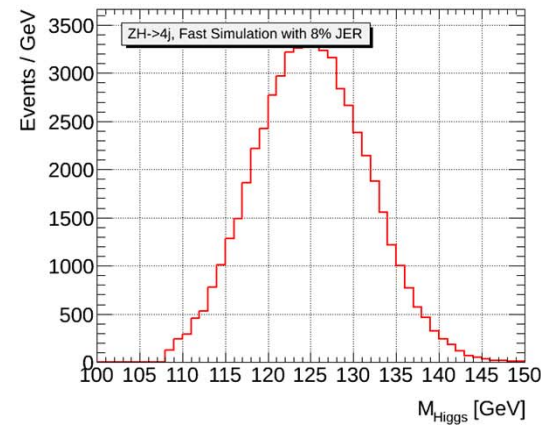
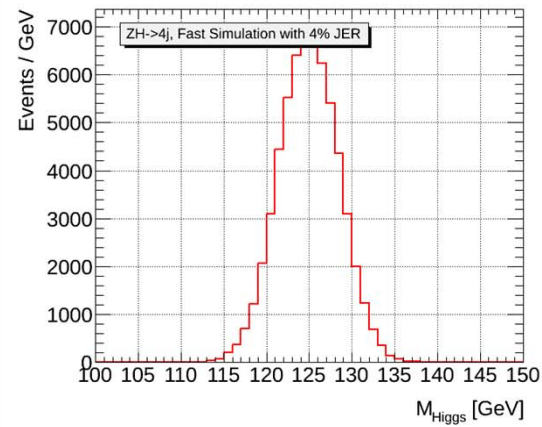
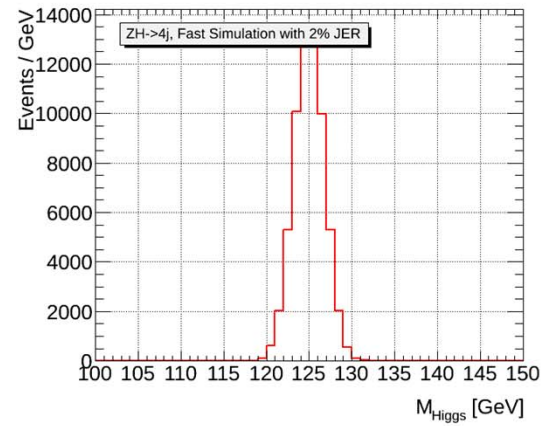
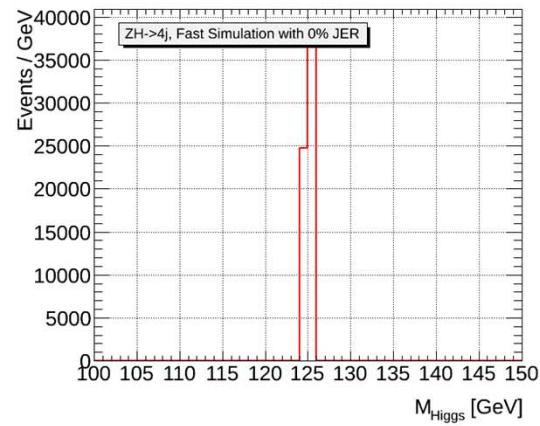
JER	ZH	HZ	ZZ	WW	ZZ or WW
0%	22964.8	37.1	3216.9	319.5	401.2
2%	22713.3	58.0	3456.4	368.4	474.5
4%	22211.9	89.3	3784.0	447.0	586.8
8%	20430.1	187.0	4282.5	639.0	976.0

Z+H->bb Branch Ratio

1. Only Z->jj is listed
2. ZH signal, others backgrounds
3. Branch ratio with different JER resolutuion

JER	ZH	HZ	ZZ	WW	ZZ or WW
0%	0.881522	0.904878	0.662295	0.061697	0.074699
2%	0.88077	0.884146	0.603928	0.04599	0.059218
4%	0.88045	0.826852	0.502864	0.02818	0.037427
8%	0.891879	0.8012	0.442325	0.019633	0.030332

Z+H->bb Signal Shape



Z+H->cc

1. ZH signal, others backgrounds
2. Events number shifts with different JER resolutuion

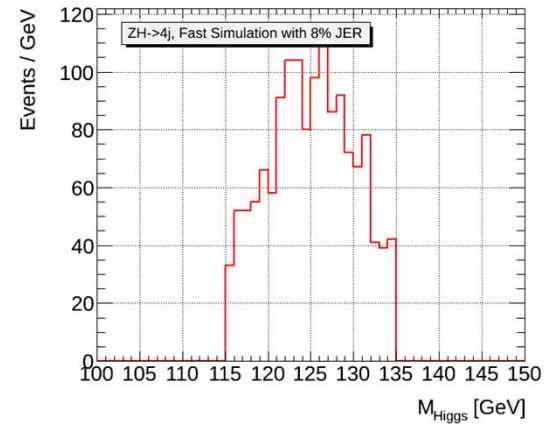
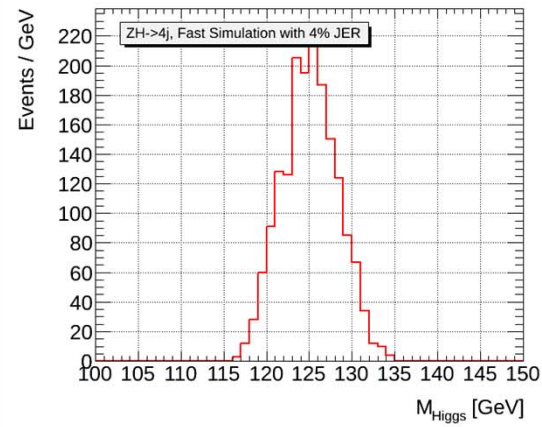
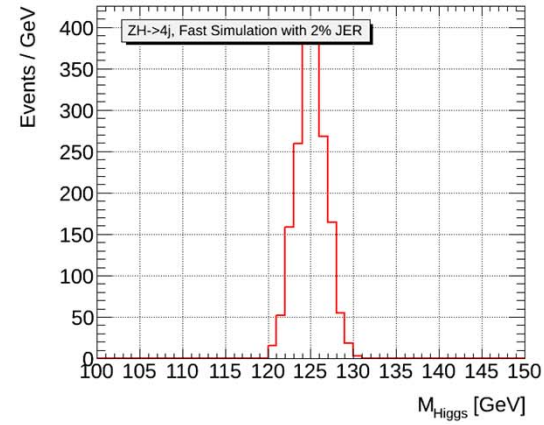
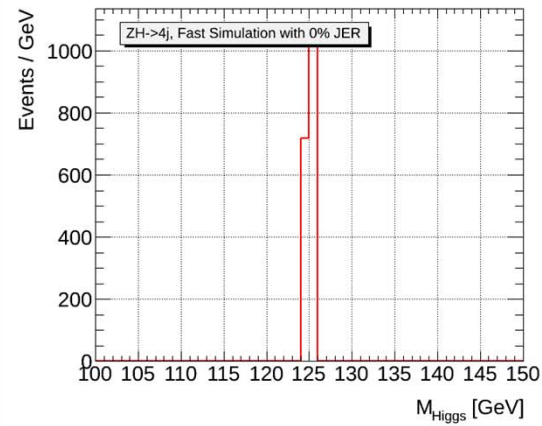
JER	ZH	HZ	ZZ	WW	ZZ or WW
0%	648.4	1.4	274.6	223.5	428.1
2%	645.2	2.9	378.6	350.9	667.6
4%	629.7	6.5	590.0	667.0	1326.2
8%	513.7	12.2	806.5	1393.3	2636.0

Z+H->cc Branch Ratio

1. Only Z->jj is listed
2. ZH signal, others backgrounds
3. Branch ratio with different JER resolutuion

JER	ZH	HZ	ZZ	WW	ZZ or WW
0%	0.024889	0.034146	0.056535	0.043159	0.079707
2%	0.025019	0.044207	0.066152	0.043806	0.083317
4%	0.02496	0.060185	0.078406	0.04205	0.084588
8%	0.022426	0.052271	0.083301	0.04281	0.081921

Z+H->cc Signal Shape



Z+H->gg

1. ZH signal, others backgrounds
2. Events number shifts with different JER resolutuion

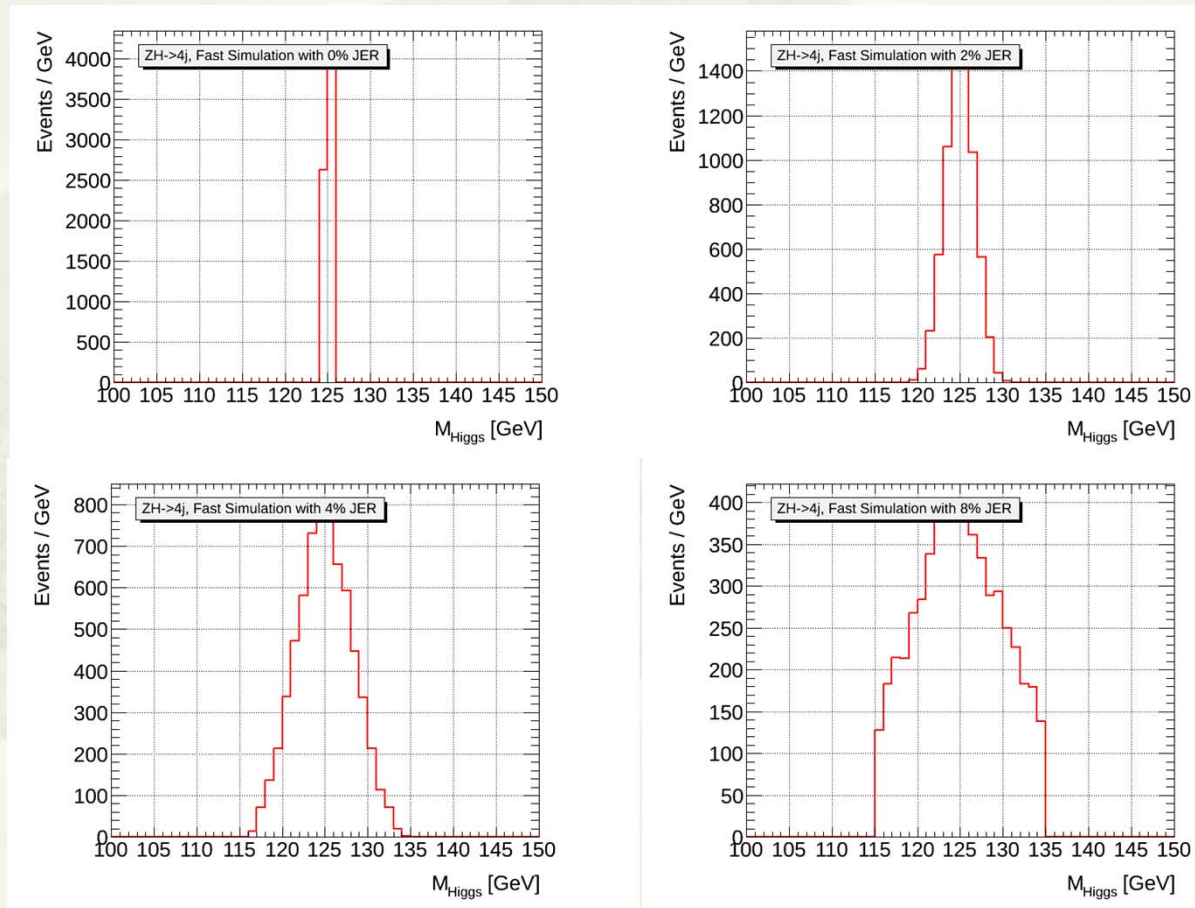
JER	ZH	HZ	ZZ	WW	ZZ or WW
0%	2438.1	2.5	1365.7	4635.5	4541.6
2%	2429.5	4.7	1888.2	7291.1	6870.7
4%	2386.3	12.2	3150.9	14748.1	13765.4
8%	1963.0	34.2	4592.8	30514.2	28565.2

Z+H->gg Branch Ratio

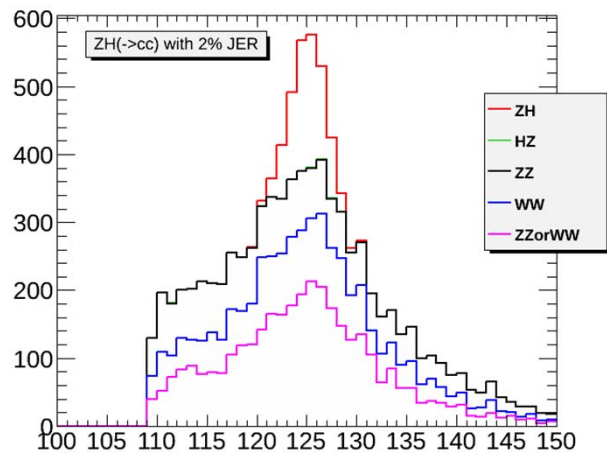
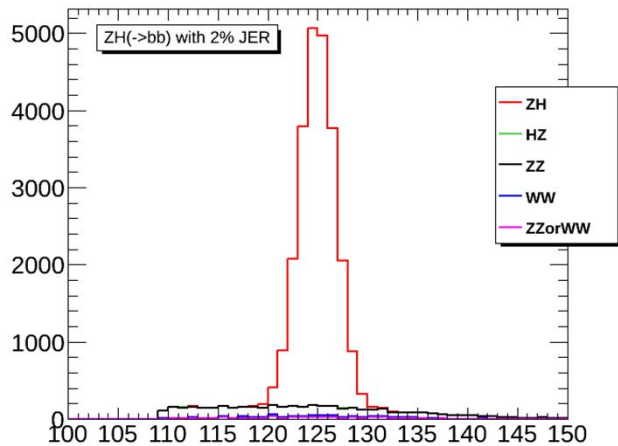
1. Only Z->jj is listed
2. ZH signal, others backgrounds
3. Branch ratio with different JER resolutuion

JER	ZH	HZ	ZZ	WW	ZZ or WW
0%	0.093588	0.060976	0.28117	0.895143	0.845594
2%	0.09421	0.071646	0.32992	0.910204	0.857466
4%	0.09459	0.112963	0.41873	0.92977	0.877985
8%	0.085695	0.14653	0.474375	0.937557	0.887747

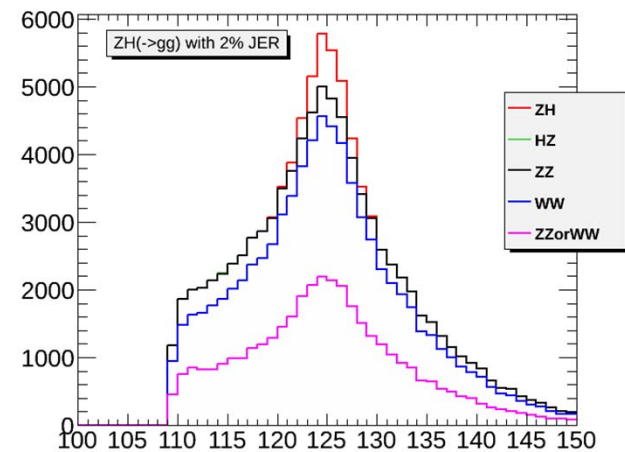
Z+H->gg Signal Shape



Z+H->jj Signal and Backgrounds



1. With Z->jj
2. With JER=2%



Summary

- * Need recommendation on JER
 - * also uncertainties on JER and JES?
- * Need samples with $Z \rightarrow ee/\mu\mu/\nu\nu$
 - * already asked Jianping Dai for them