

中国科学院高能物理研究所
Institute of High Energy Physics
Chinese Academy of Sciences



CEPC360GeV下WWfusion过程的 截面测量

报告人：侯瑛琦

Hongbo Liao, Taozhe YU, Yingqi Hou, Kaili Zhang, Gang Li

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更新结果(修改了znnh过程的截面)



• cut flow(在尽可能保留信号和ZH的情况下，去其它除本底)

cut	wwfusio n	znnh	n1n1hb b	qq	sw_sl0q q	ww_sl	sz_sl	zz_sl	$S/\sqrt{S+B}$
pre	17209	14790	20961	2123258	117427	1686000	178340	266300	8.20
nPFOs>20	17209	14789	20961	2122264	117421	1685683	177124	165792	8.20
100<E<250	16675	14586	20397	1513199	44150	472821	153155	175197	10.79
pt>10	16281	14549	20008	251869	43243	460444	150520	146797	15.65
lep_veto(pt<20)	15757	13839	19261	247596	16407	188994	148658	143038	17.92
100<m_total<150	14293	12168	17315	63459	6764	47977	22041	24799	32.75
50<m_recoil<250	14094	11298	16795	41194	3688	27066	16910	14289	39.47

更新结果



• cut flow(在尽可能保留信号和ZH的情况下，去其它除本底)

cut	wwfusion	zn1n1h	n1n1hbb	qq	sw_sl0qq	ww_sl	sz_sl	zz_sl	$S/\sqrt{(S+B)}$
y12<0.8	13573	11273	16297	40182	3650	26600	16709	14222	38.36
y23<0.07	12970	15701	15702	38477	3407	23876	16141	13835	37.62
y34<0.021	12662	11041	15355	37614	3008	22549	15762	13481	37.32
-0.98<cosij<0.25	12320	10265	14766	28487	2202	15102	12681	9121	41.25
b_tag	11119	9264	13326	5152	21	144	2293	1650	65.56

b_tag(估计) (95%eff+1%bkg rejection)	0.9025	0.9025	0.9025	0.18085	0.0095	0.0095	0.18085	0.18085	
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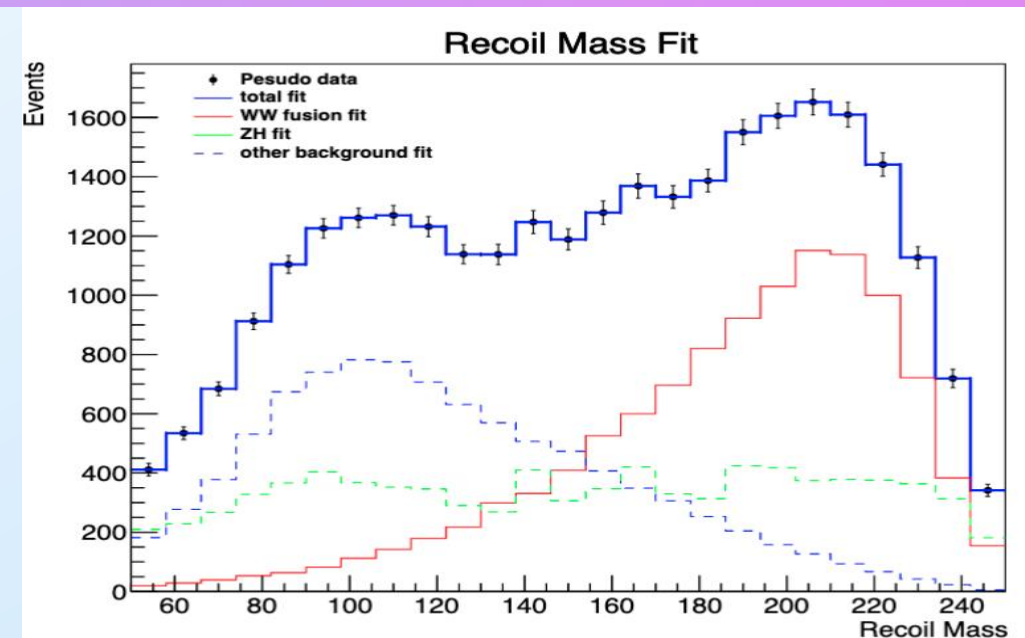
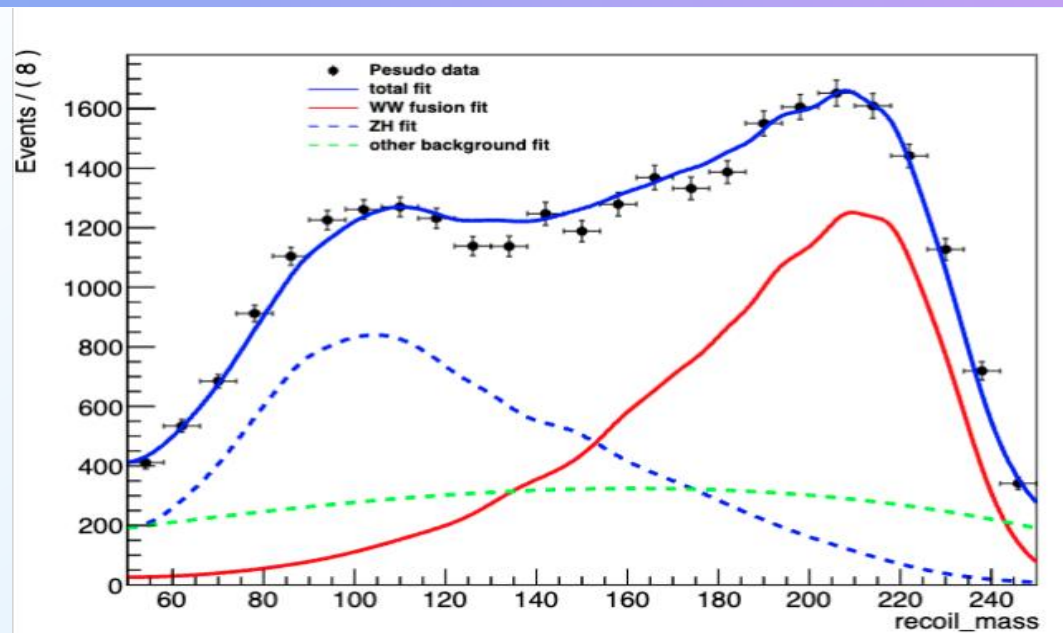
其他本底检验



cut	ww_h0uubd	ww_l0ll	zz_h0dtdt	zz_l0mumu
pre	36.5	280800	151558	10408
nPFOs>20	36.5	10063	151558	25.6
100<E<250	2.4	5847.2	9290	0
pt>10	1.0	5757	4271	0
lep_veto(pt<20)	1.0	725	4204.3	1
100<m_total<150	0.1	136	393	0
50<m_recoil<250	0.1	136	329.7	0
y12<0.8	0.1	136	295	0
y23<0.07	0.1	136	206	0
y34<0.02	0.1	136	92	0
-0.98<cosij<0.25	0	126	92	0
b_tag	0	0	0	0

更新结果

N_wwfusion	N_zn1n1h	N_otherbkg	sum
11119	9264	8379	28762



N_others_bkg = 6962.11 +/- 525.616
N_wwfh_bb = 11926.9 +/- 277.582
N_znnh_bb = 9872.69 +/- 319.896

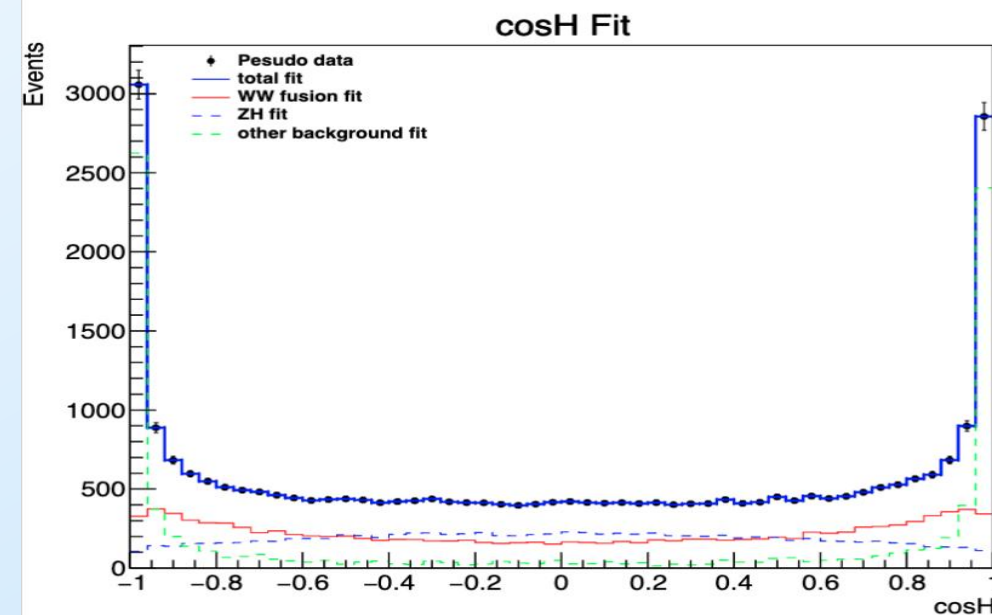
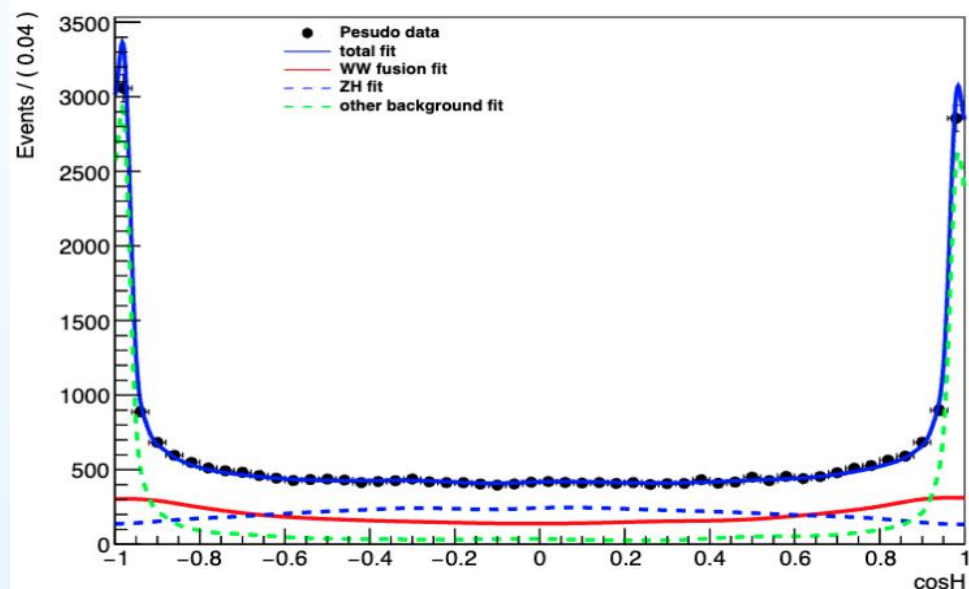
N_others_bkg = 8381.05 +/- 585.718
N_wwfusionh_bb = 11118.2 +/- 309.843
N_zn1n1h_bb = 9264.13 +/- 340.523

	wwfusion	zn1n1h	otherbkg
中心值偏离	7.27%	6.57%	16.91%
拟合精度	2.33%	3.24%	

	wwfusion	zn1n1h	otherbkg
中心值偏离	~ 0	~ 0	~ 0
拟合精度	2.78%	3.67%	

更新结果

N_wwfusion	N_zn1n1h	N_otherbkg	sum
11119	9264	8379	28762



N_others_bkg = 8766.7 +/- 141.808
 N_wwfusionh_bb = 9708.03 +/- 468.244
 N_zn1n1h_bb = 10288.6 +/- 411.017

N_others_bkg = 8379.05 +/- 138.877
 N_wwfusionh_bb = 11119.5 +/- 463.481
 N_zn1n1h_bb = 9263.41 +/- 405.625

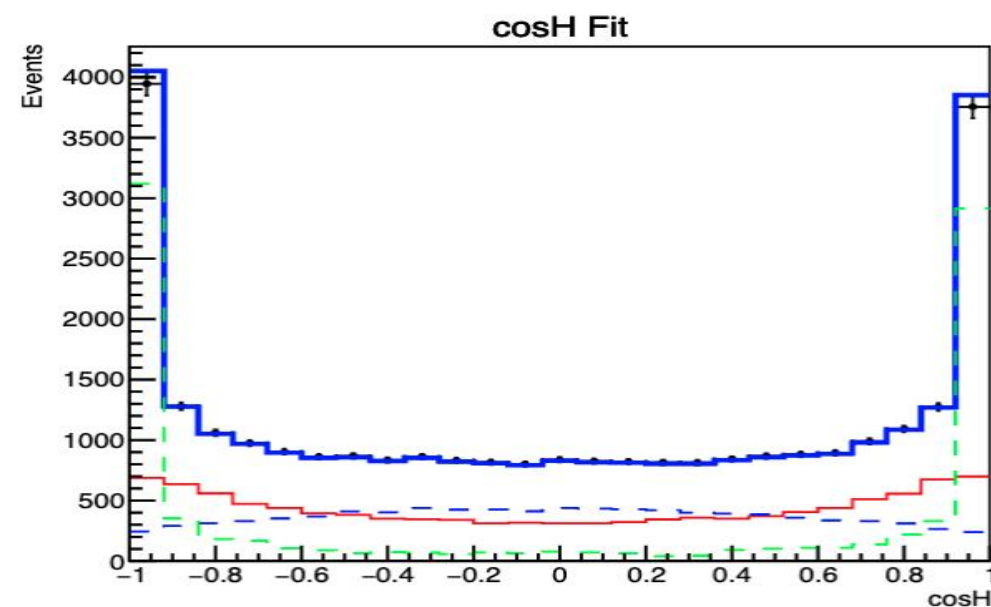
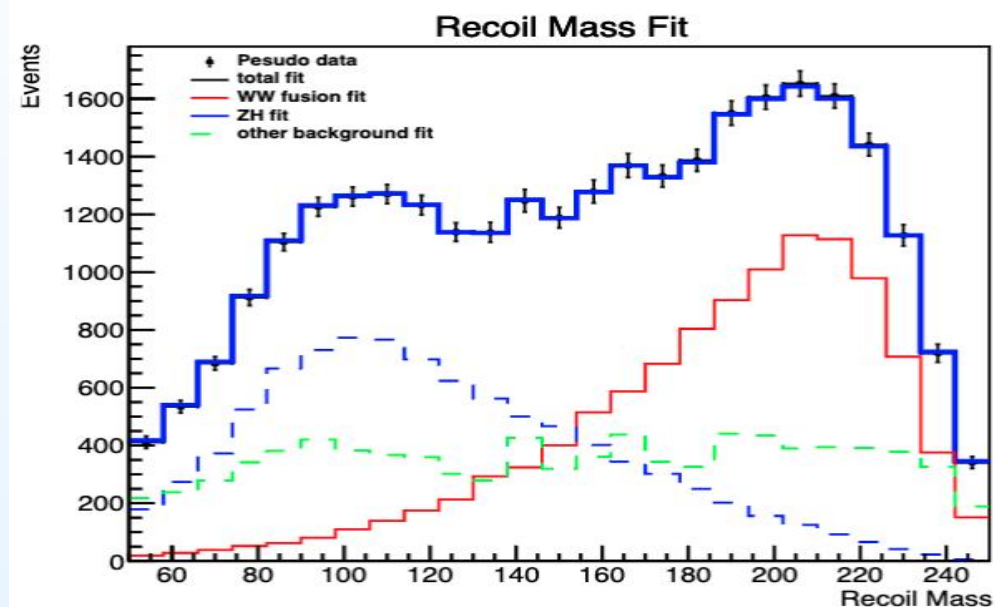
●中心值偏差较大

	wwfusion	zn1n1h	otherbkg
中心值偏离	12.69%	11.06%	4.63%
拟合精度	4.8%	3.99%	

	wwfusion	zn1n1h	otherbkg
中心值偏离	~ 0	~ 0	~ 0
拟合精度	4.16%	4.38%	

二维拟合

N_wwfusion	N_zn1n1h	N_otherbkg	sum
11119	9264	8379	28762



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N_others_bkg      = 8723.53      +/- 130.927
N_wwfusionh_bb    = 10890        +/- 150.51
N_zn1n1h_bb       = 9148.35     +/- 132.575
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	wwfusion	zn1n1h	otherbkg
中心值偏离	2.51%	9.18%	4.11%
拟合精度	1.38%	1.44%	

- ✓ JER (jet energy resolution)
- ✓ JAR of $\cos\theta$ (jet angle resolution)
- ✓ JAR of ϕ (jet angle resolution)
- ✓ btag error



Back up

THANK YOU

汇报人：侯瑛琦