

- Physics meeting @ 2016/02/10

- 1. Parameters of a and b in the Lagrangian are correlated.**
- 2. A possible way to restore the situation that we can distinguish both params. is usage of ZZ-f at 250GeV.**
- 3. Check angular distribution, reconstructed information and background.**

1. Parameters of a and b in the Lagrangian are correlated.

$$\mathcal{L}_{ZZH} = M_Z^2 \left(\frac{1}{v} + \frac{a}{\Lambda} \right) Z_\mu Z^\mu H + \frac{b}{2\Lambda} Z_{\mu\nu} Z^{\mu\nu} H + \frac{\tilde{b}}{2\Lambda} Z_{\mu\nu} \tilde{Z}^{\mu\nu} H$$

A fitting result **We can not distinguish a and b.**

250GeV L0.8 R0.3 250fb-1

PARAMETER CORRELATION COEFFICIENTS

NO. GLOBAL	1	2	3
1	0.98433	1.000	-0.984
2	0.98433	-0.984	1.000
3	0.04733	0.047	-0.046

a parameter: 0 +/- 0.526508
 b parameter: 0 +/- 0.192201
 bt parameter: 0 +/- 0.109208

Fix one param.

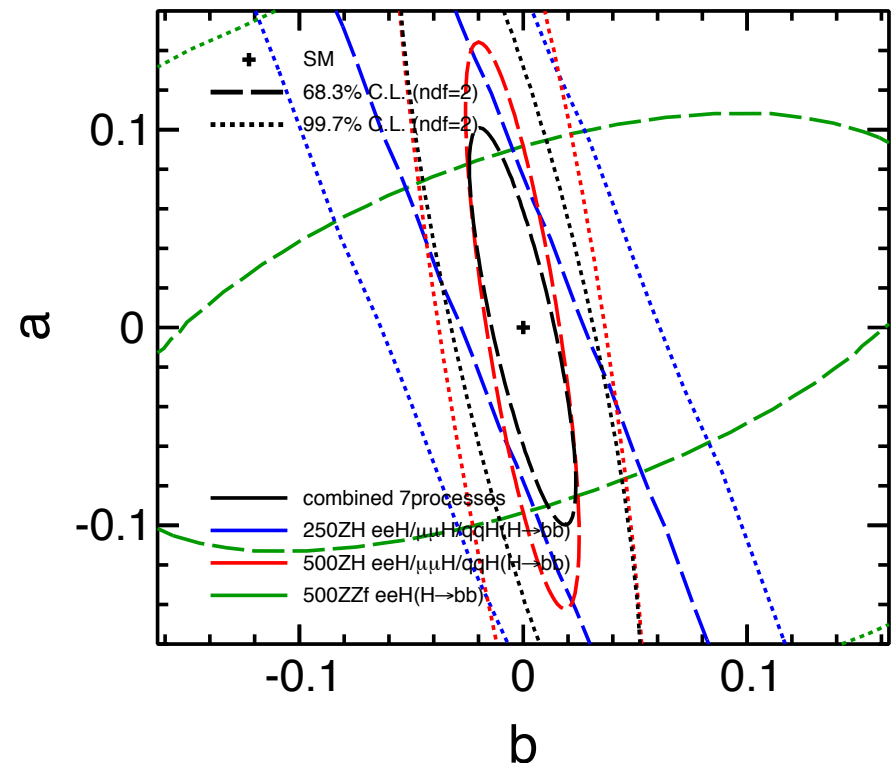
Fix b parameter

! parameter: 0 +/- 0.0948069
 ! parameter: 0 +/- 0
 ! parameter: 0 +/- 0.109092

Fix a parameter

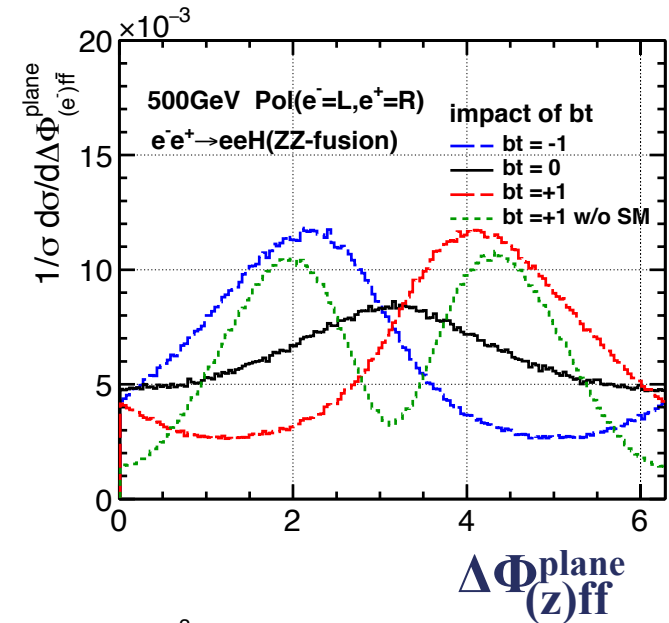
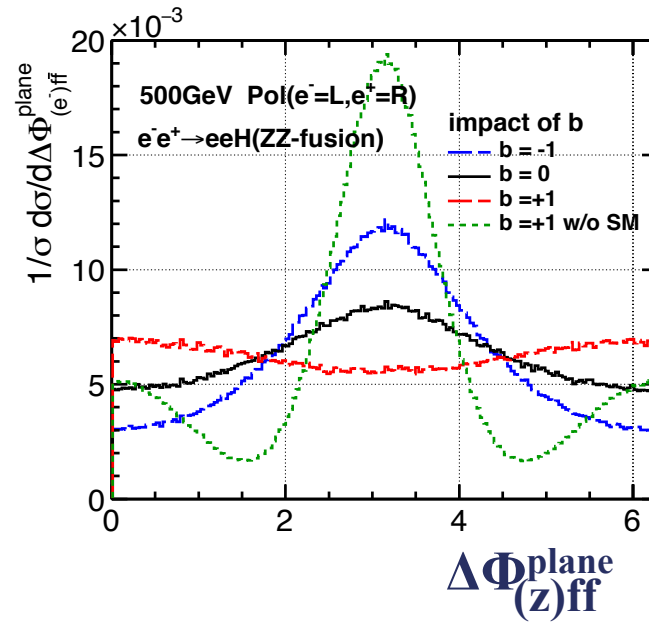
! parameter: 0 +/- 0
 ! parameter: 0 +/- 0.0340557
 ! parameter: 0 +/- 0.109087

Nominal cross section

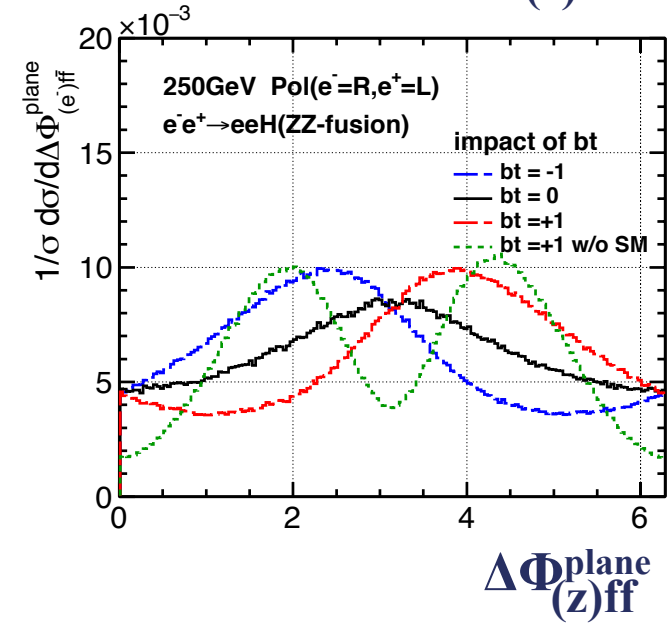
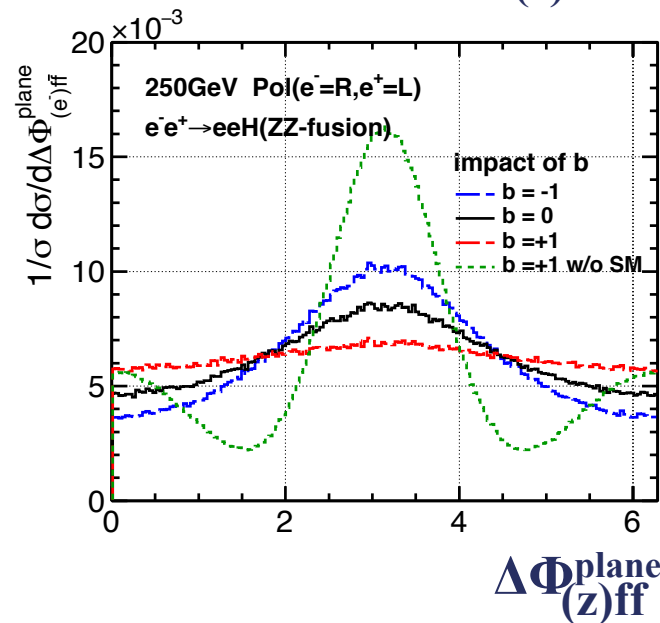


2. A possible way to restore the situation that we can distinguish both params. might be usage of ZZ-f at 250GeV.

500GeV



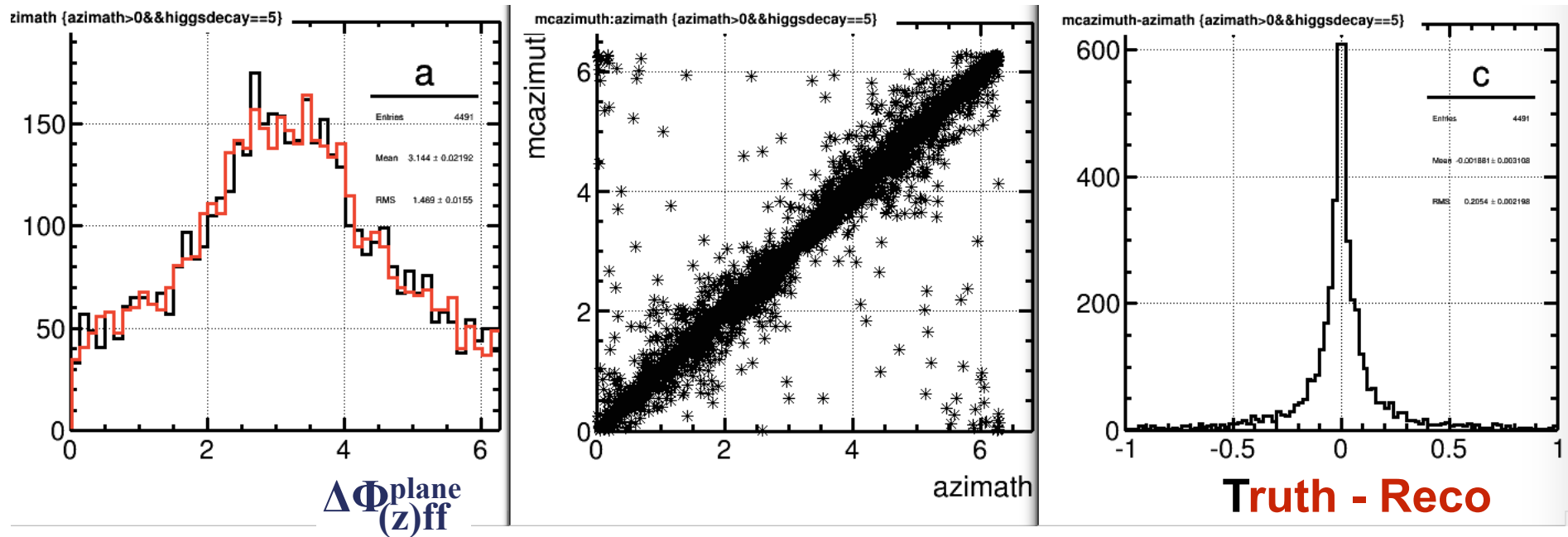
250GeV



eeH(ZZ-f) at 250GeV. Xs: L1.0R1.0 ~ 0.76 (physsim)

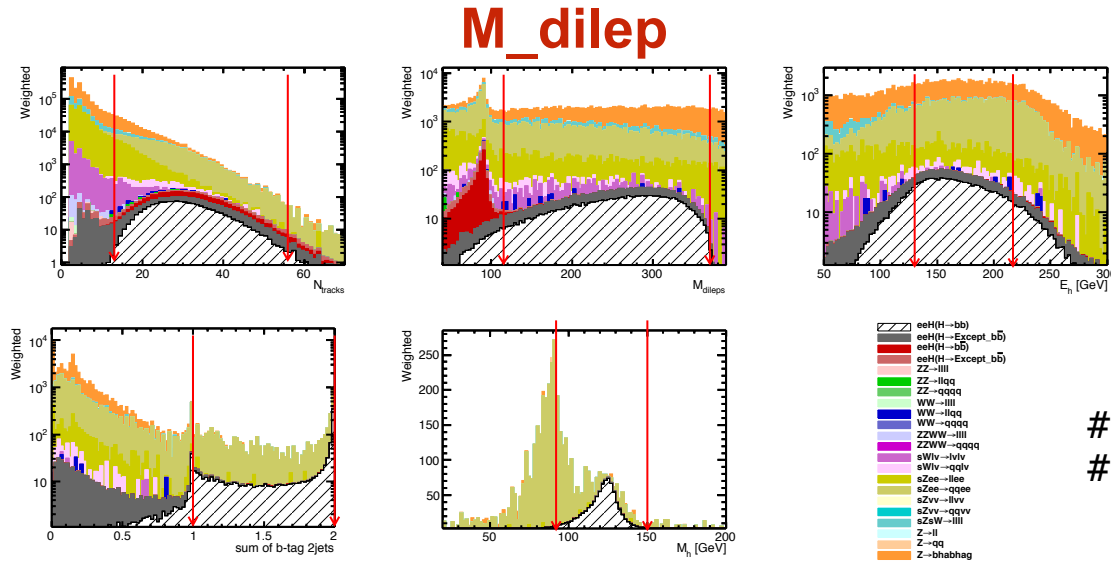
3. Check angular distribution, reconstructed information and background.

Reco vs Truth



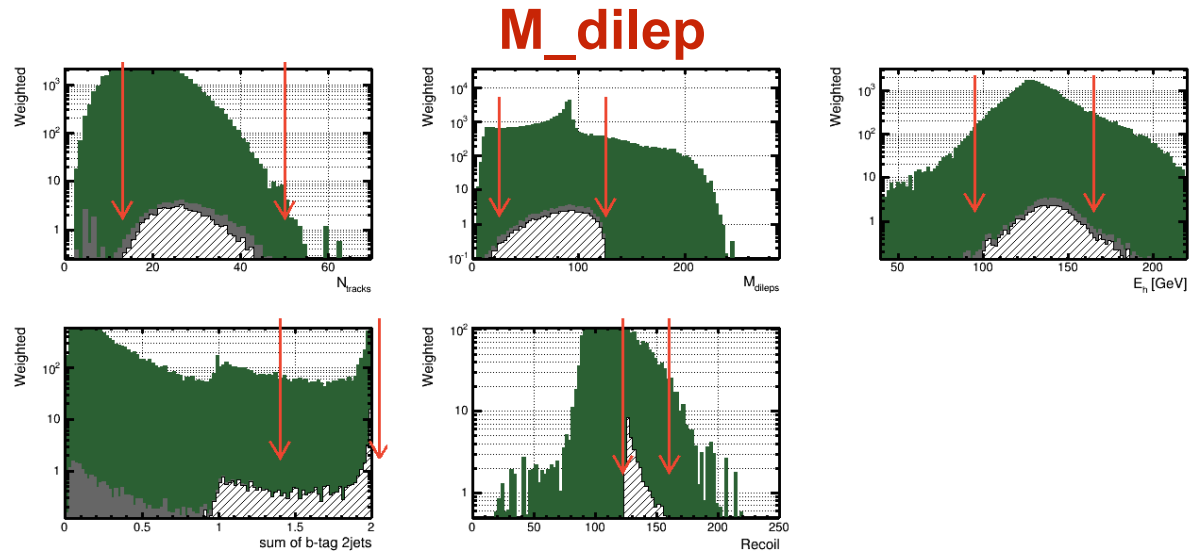
3. Single Z+ee is dominant

500GeV
H->bb



Nsig integral ~ 850
Nbck integral ~ 850

250GeV
H->bb



Nsig integral(restricted range) : 28.3
Nbck integral(restricted range) : 755.3
Significance : 1.01

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- Physics meeting @ 2016/02/10 Summary

ZZ-f at 250GeV is useless for the moment.