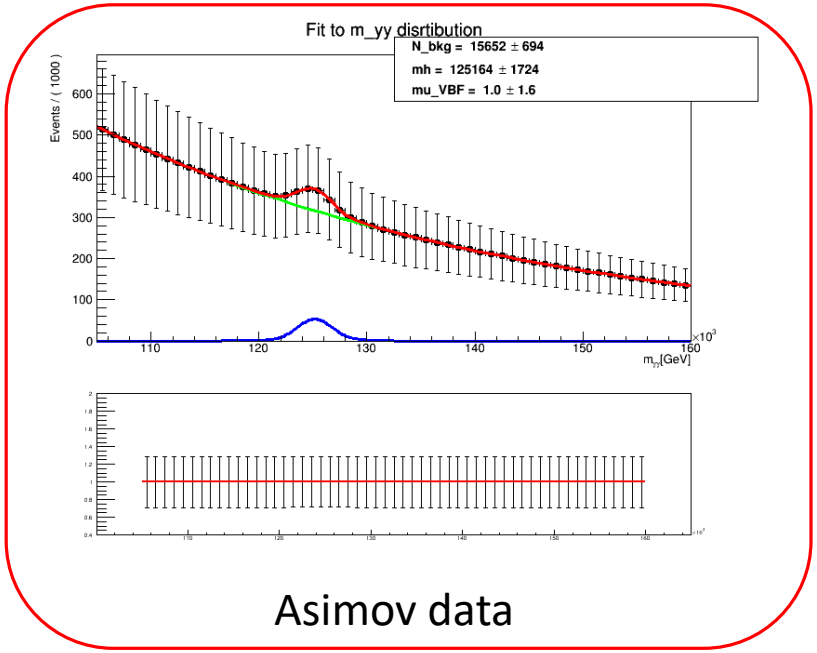
# Weekly report

FANGYI GUO

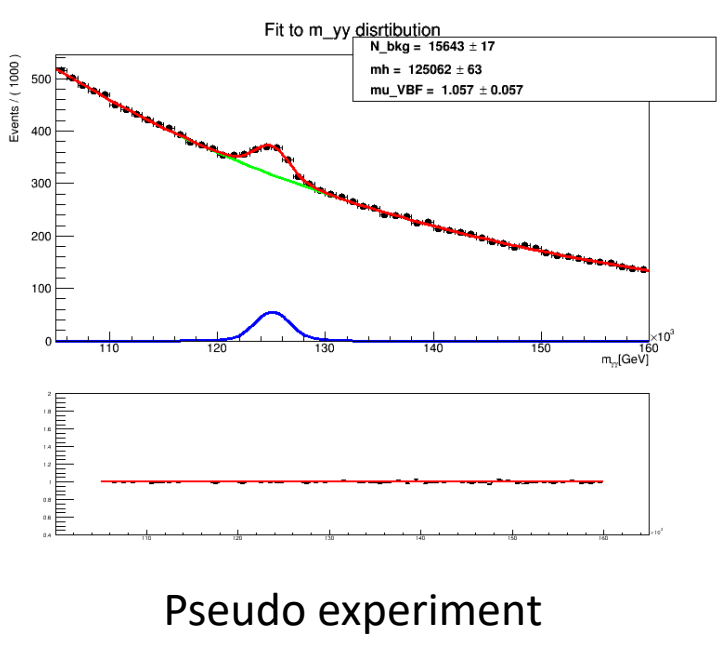
# VBF HCP

Correction:

- Pseudo experiment: generate random numbers with PDF (~1M stat.).
- Asimov data: set Nevents exactly as PDF described.




Asimov data




Pseudo experiment

# VBF HCP

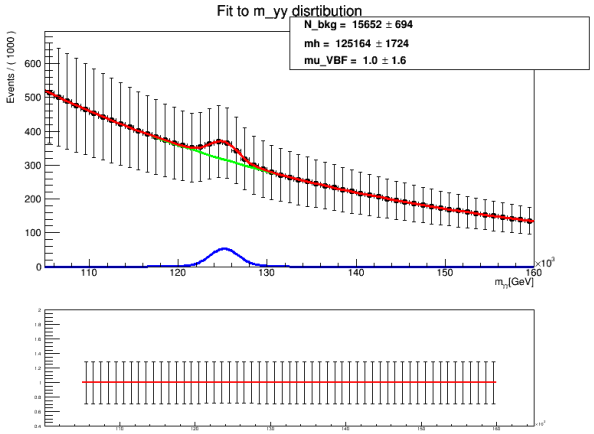
Debug in binfit method:

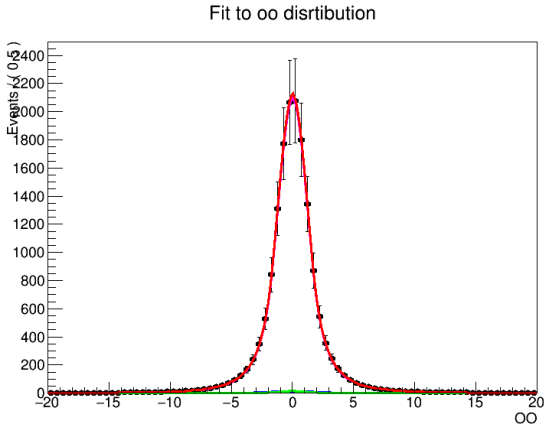
- I asked all OO bins shared 1 mu, which would fix the OO shape.
- debug: each bin has its own Nvbf. Plan to use different Nvbf[bins] for each dtilde, so that requiring same mu in all OO bins would be fine.

2D fit:

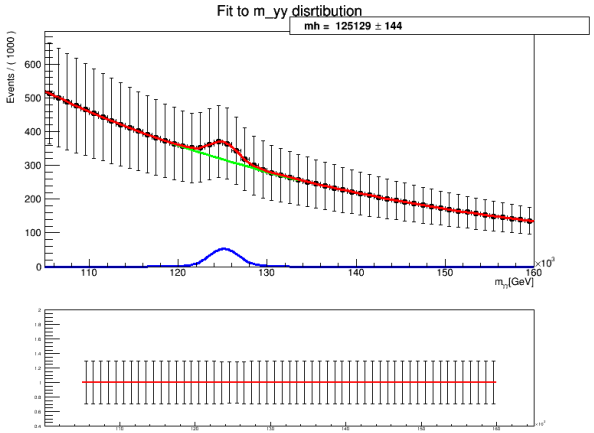
- DSCB(myy)*DSCB(OO) vs. DSCB(myy)*Hist(OO).
  - Use Asimov data (generated with PDF) instead of pseudo experiment to extract NLL.
  - In the model, Nvbf is float in dtilde/ fix to SM, corresponding to considering $\sigma$ contribution or not.
  - Generate a set of pseudo experiment data, see if minimum NLL is a gaussian(Not finished).

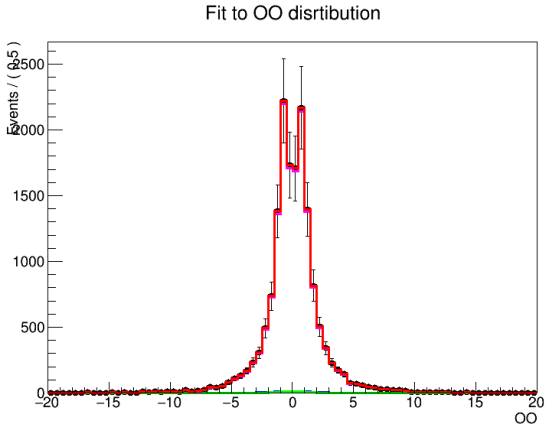
# VBF HCP



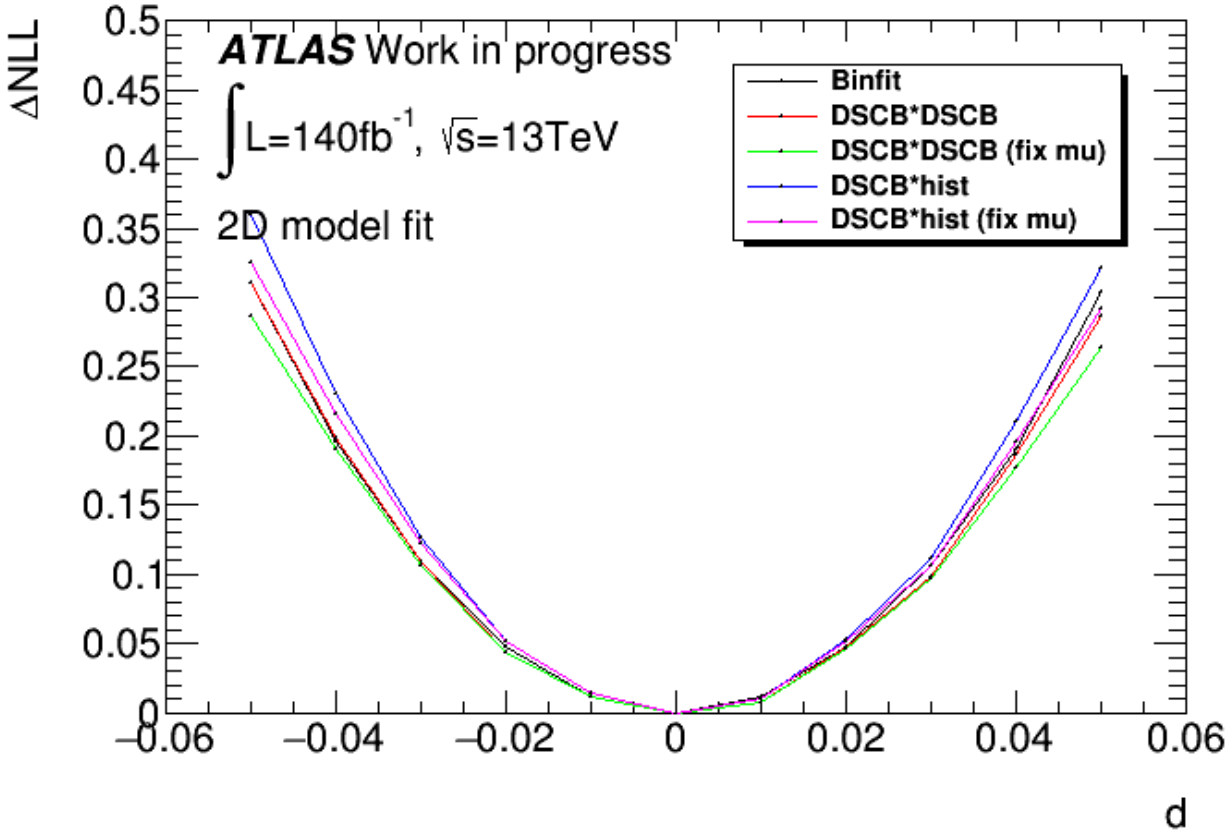

DSCB*DSCB




DSCB*Hist

# VBF HCP




68% CL
Binfit: [-0.064, 0.064]
2D: [-0.064, 0.065]
2D(fix): [0.066, 0.068]
2D hist: [-0.059, 0.061]
2D hist(fix): [-0.062, 0.064]

Huirun's result last week

- stat only expected interval for $\tilde{d}$ :
  68% CL : [-0.065, 0.069]
  95% CL : [-0.12, 0.122]