

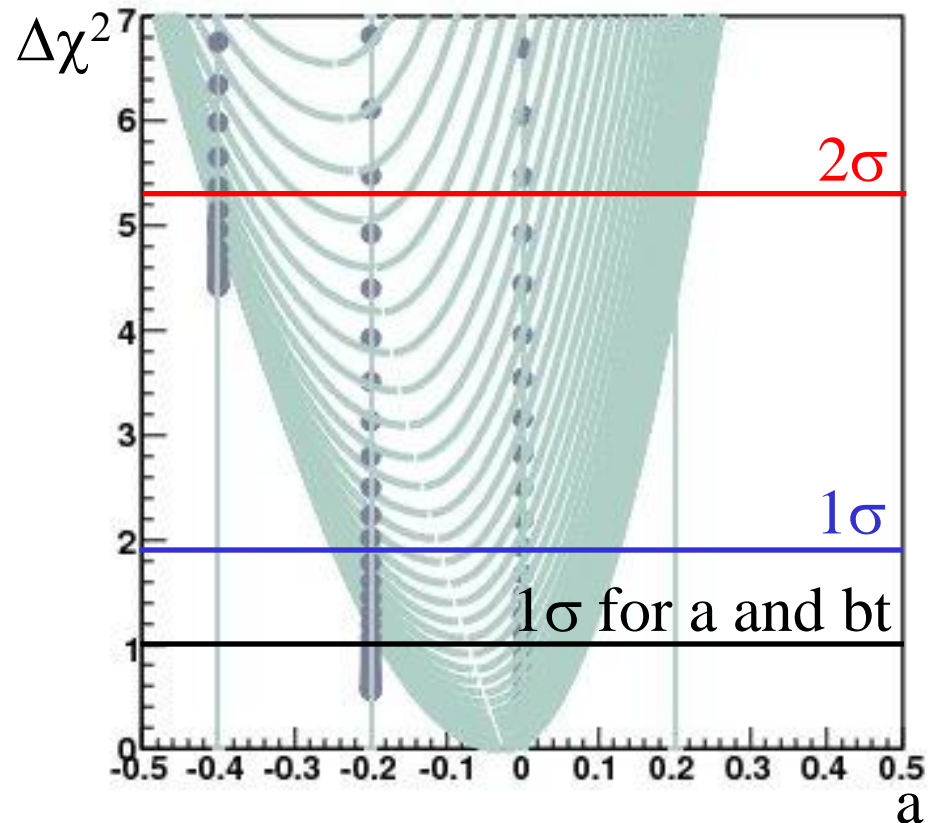
# Study of $H \rightarrow WW^*$

'10 7/2 Y. Takubo (Tohoku U.)

# Contour plot for a v.s. btilde (1)

3 probability regions were checked.

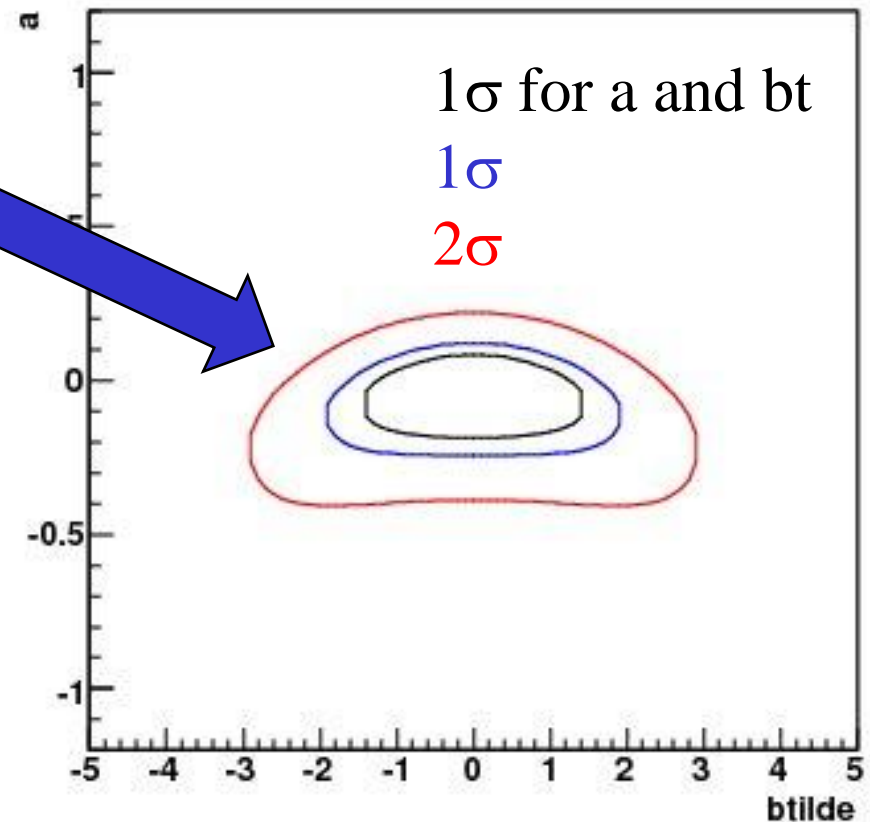
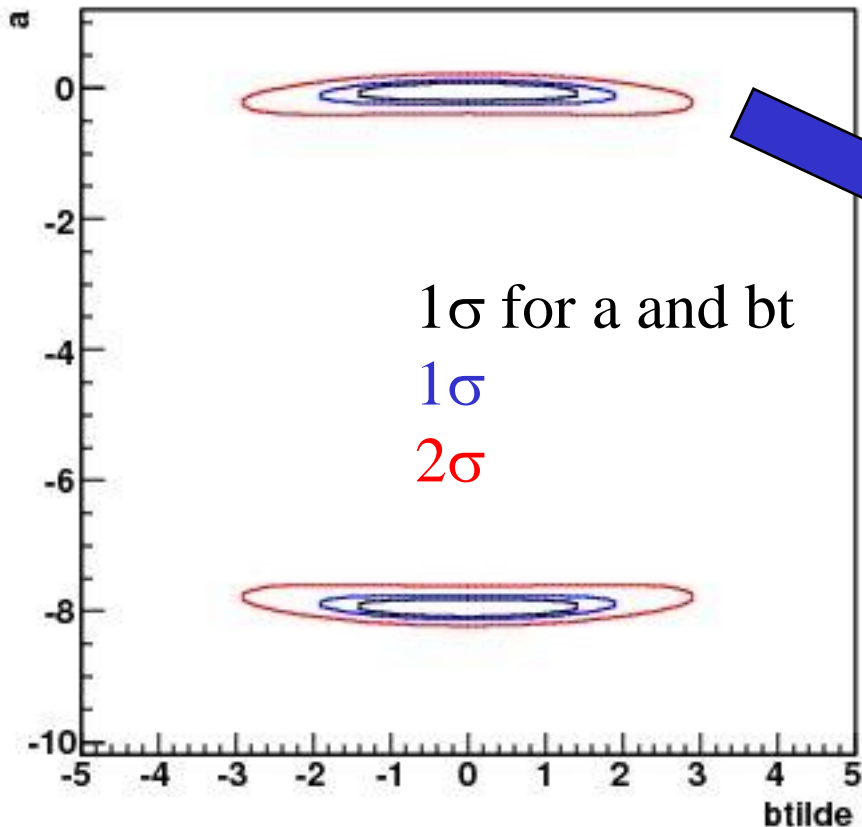
- Region to include both a and bt in  $1\sigma$  region
  - probability:  $0.68 \times 0.68 = 0.46$
- $1\sigma$  probability region
  - Probability: 0.68
- $2\sigma$  probability region
  - Probability: 0.95



# Contour plot for a v.s. btilde (2)

The contour plot for a v.s. btilde was made.

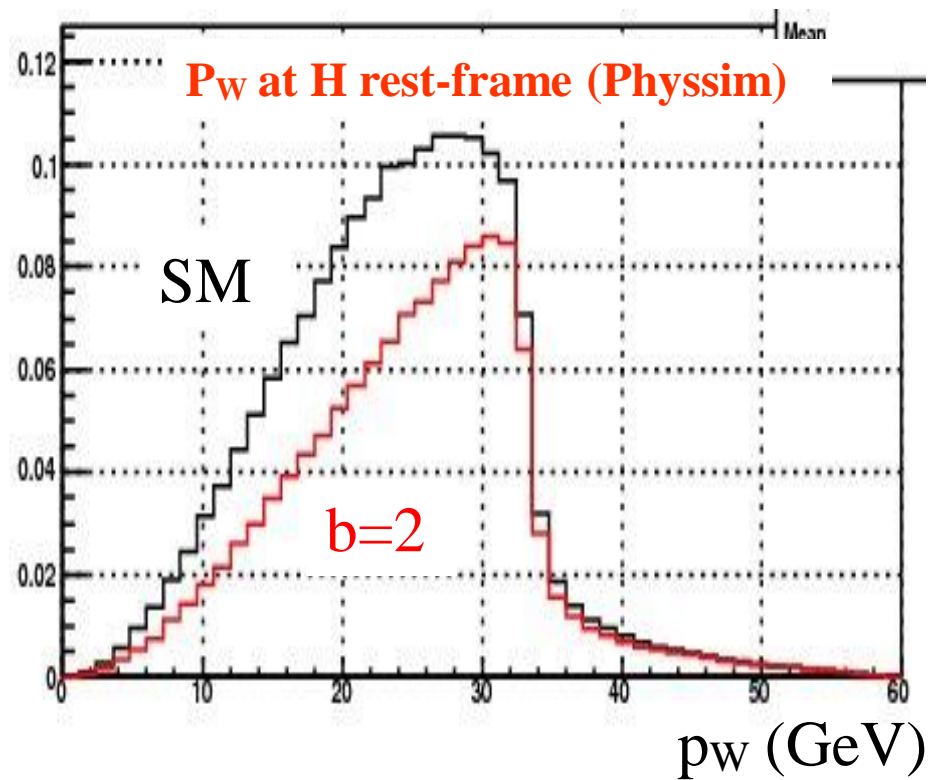
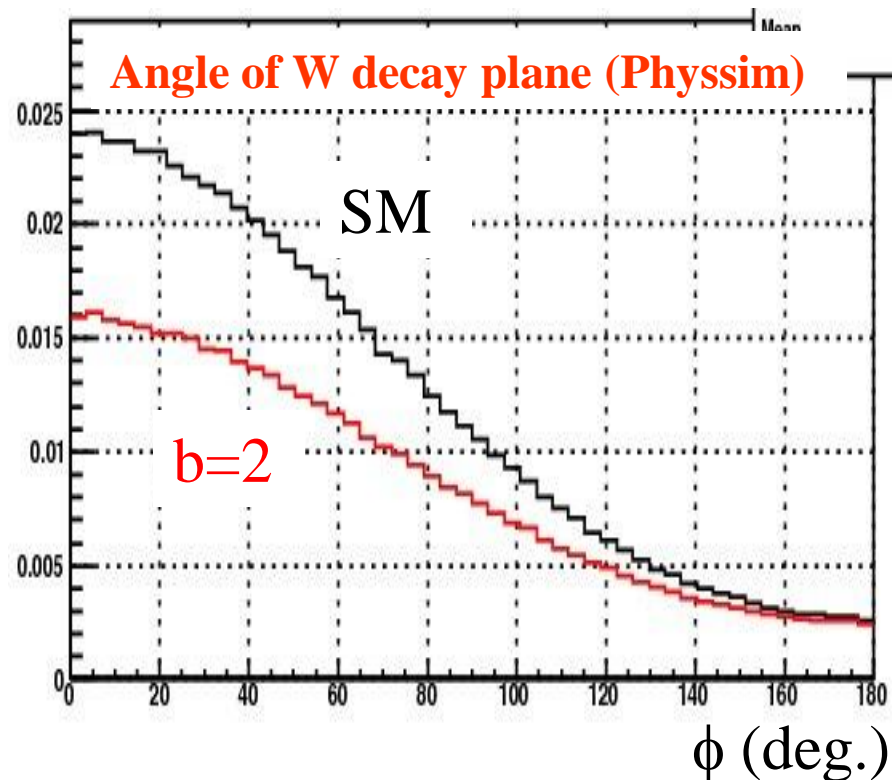
- The clear probability contour can be seen.
- The contour for a v.s. b and b v.s. btilde will be made.



# Contour plot for a v.s. b (1)

The angle of W decay planes and W momentum at the Higgs rest-frame were checked to determine a and b.

- These distribution shapes changes with b.
- The contour plots for a v.s. b were made with these variables.

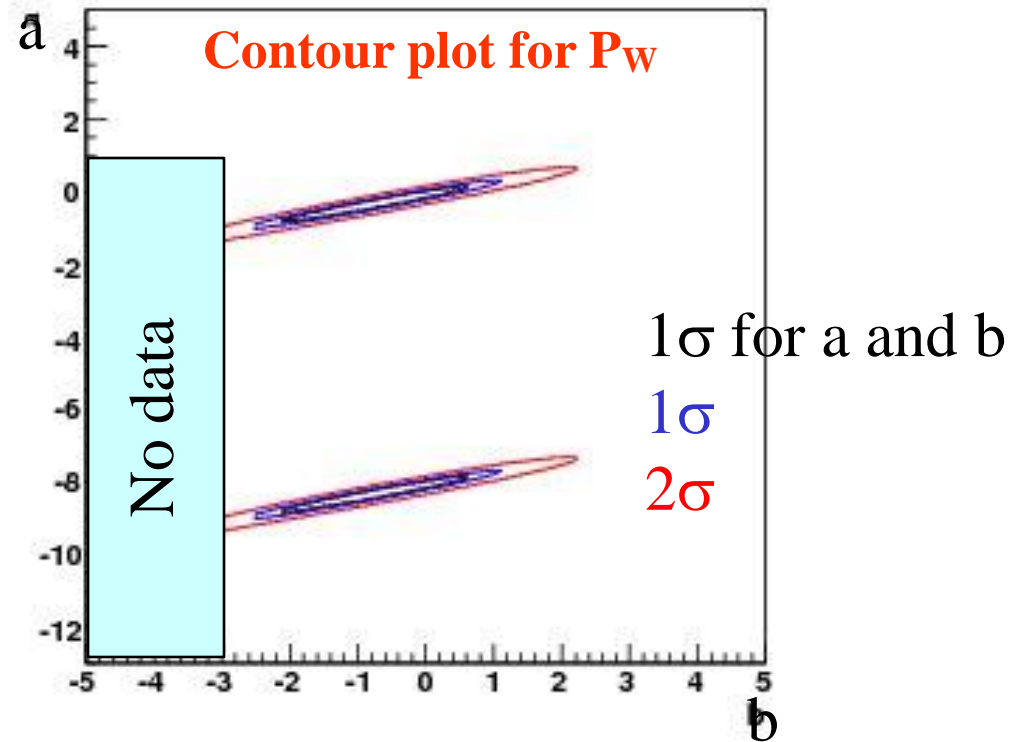
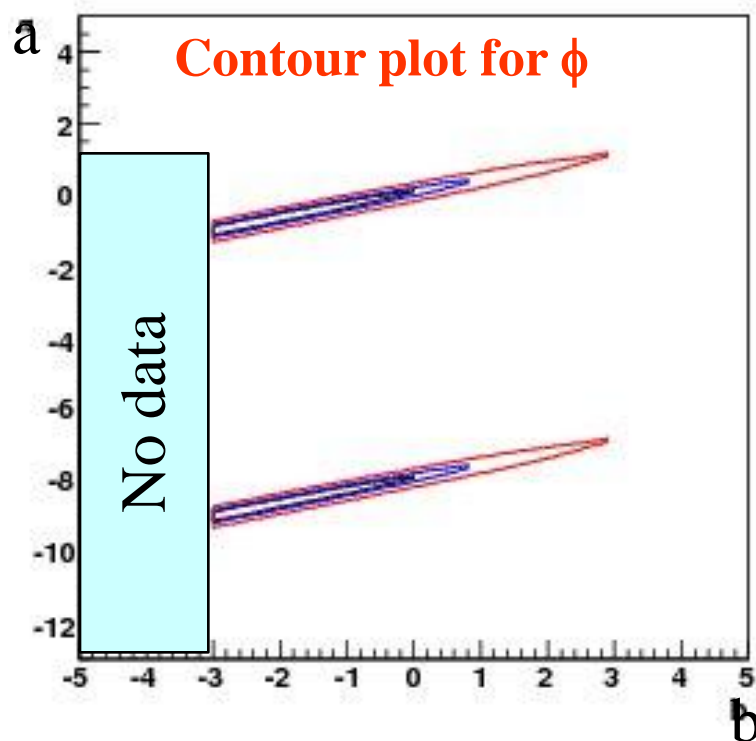


# Contour plot for a v.s. b (2)

The contour plot for a v.s. b was made with the plane angle and W momentum at the Higgs rest-frame.

- The W momentum distribution was made without the c-tagging.
- The both variables can give a constraint to a and b.

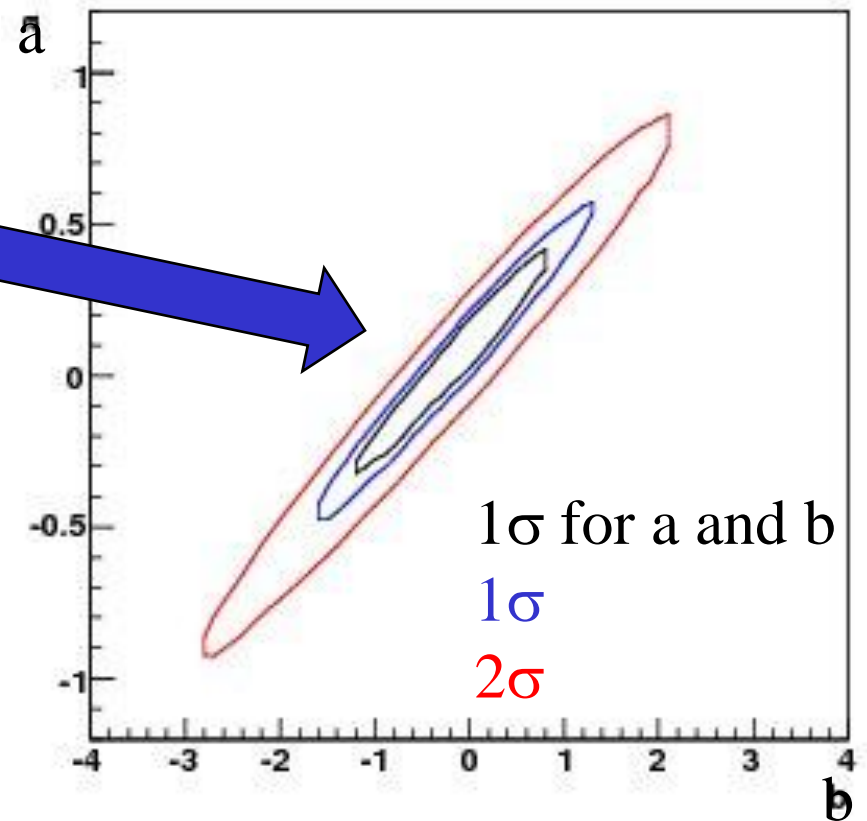
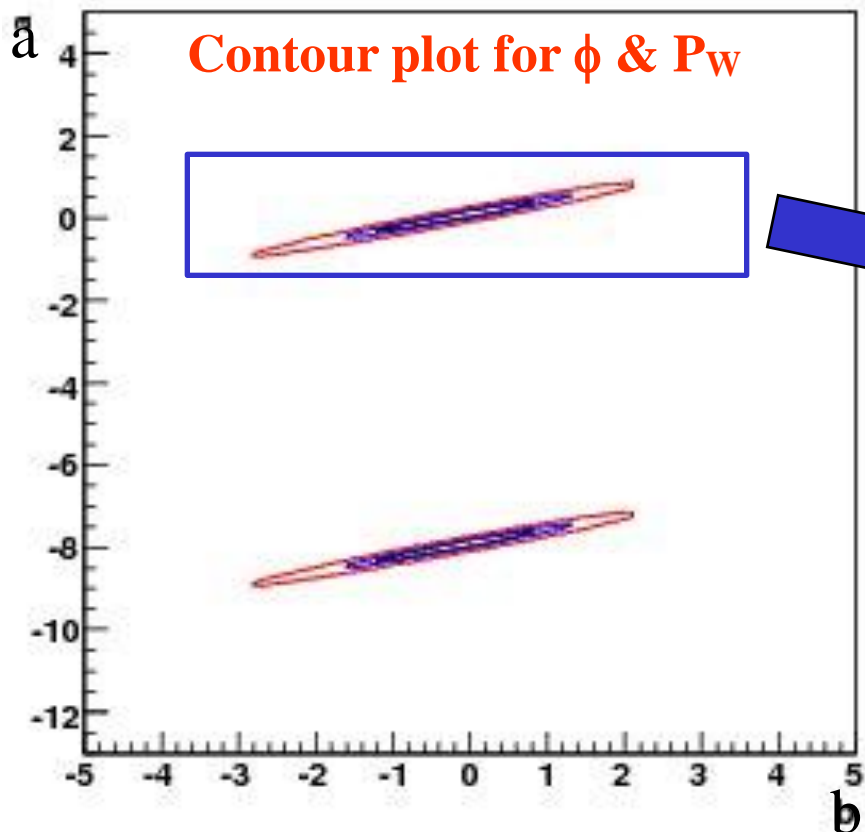
→ Let's combine these plots!



# Contour plot for a v.s. b (3)

The contour plot was made by using the distributions of  $\phi$  and  $p_w$ .

The probability contour for a v.s. b could be obtained.

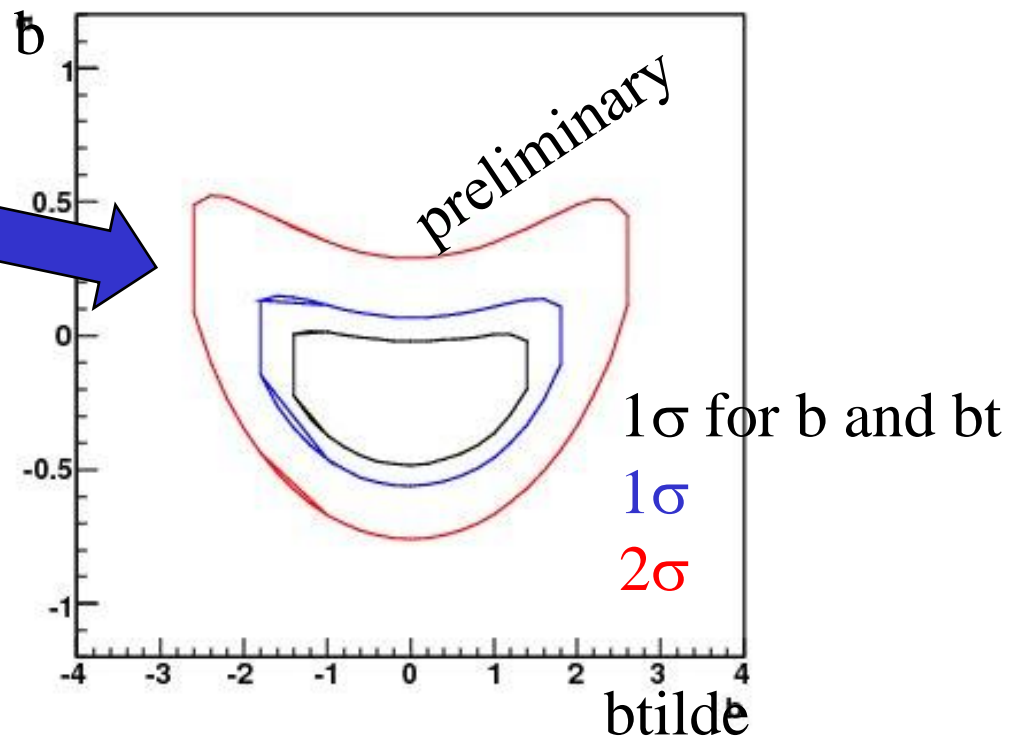
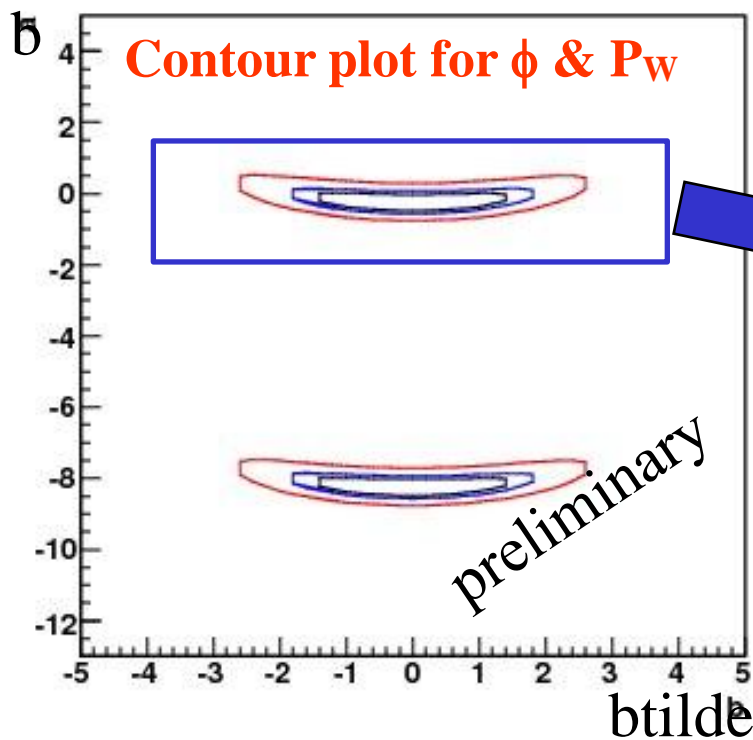


# Contour plot for $b$ v.s. $b\tilde{t}$

Preparation of the contour plot for  $b$  v.s.  $b\tilde{t}$  is also ongoing.

- The plane angle and  $W$  momentum at the Higgs rest-frame are used.
- Although the data production is still ongoing, the probability contour can be seen.

→ This analysis is almost finished.



# Summary

- The probability contour plots were made.
- The plot for  $a$  v.s.  $b$  was made with the decay angle distribution.
- The plot for  $a$  v.s.  $b$  was made with the decay angle and  $W$  momentum distributions.
- That for  $b$  v.s.  $b$  will be made soon.