

**Local discussion @ 2016/08/26**

**the comparison between shape analysis and MELA.**

**the effect of ISR.**

**SGV software to increase samples:**

**According to Mikael, his latest SGV which can handle deposited energy is not ready and three weeks will be needed for usage of his SGV.**

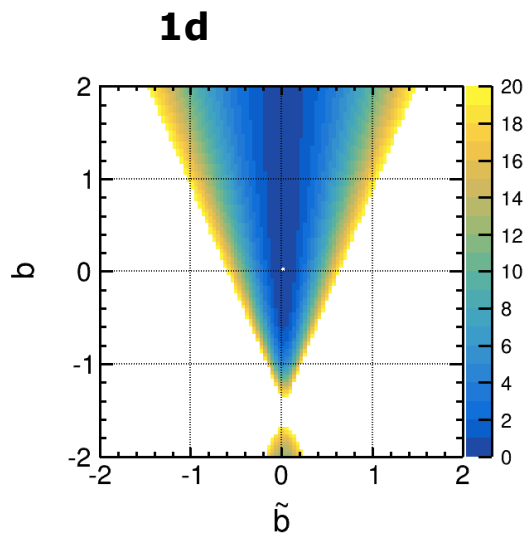
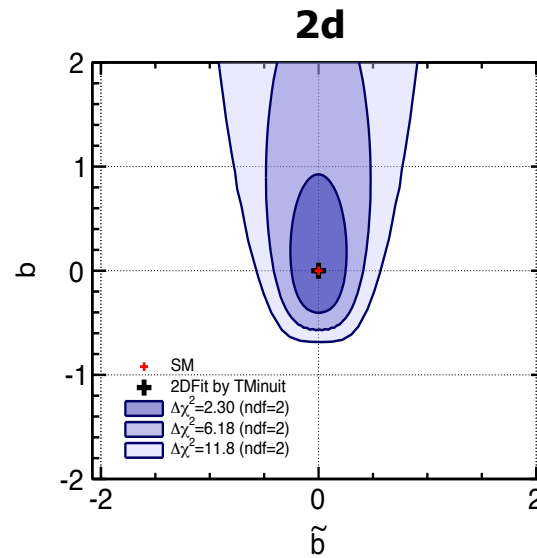
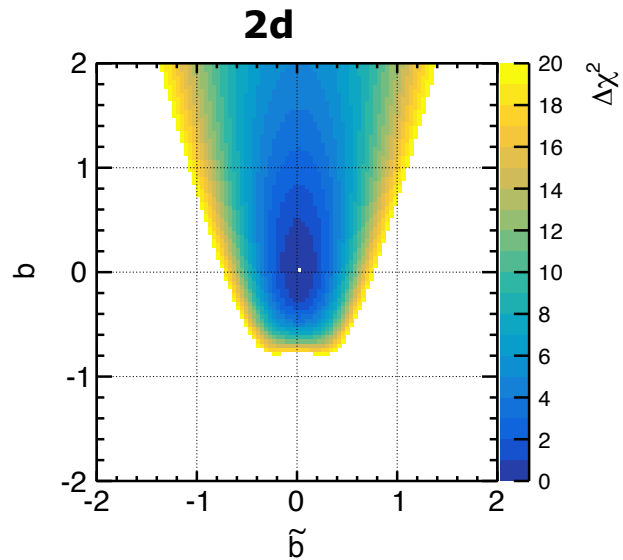
**I started to prepare a paper on VVH.**

**it will include all classical shape analysis of ZZH and WWH (7 process and 6or7 processes)**

## 250 GeV ZH $\rightarrow$ mmH

Classical shape analysis.

Include detector response-f.

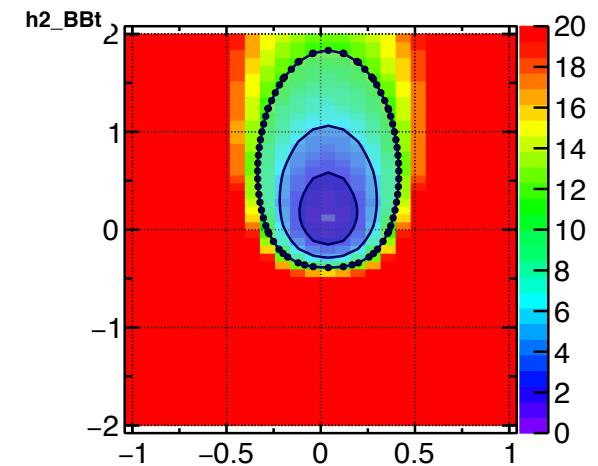


MELA

Reconstructed info eL0.8pR0.3

Lumi = 250

Kinematic constraint



Draw("cont")

250 GeV ZH → mmH

Include detector response-f.  
+ Include cross section.

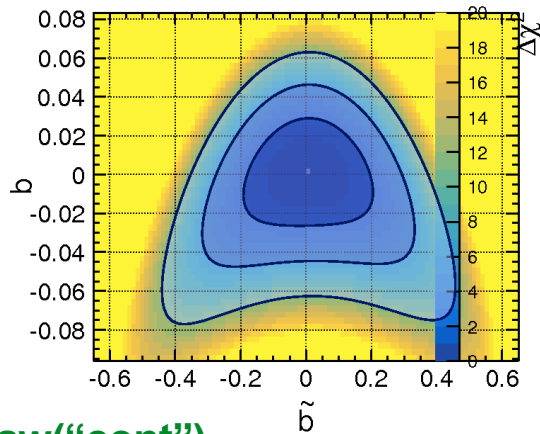
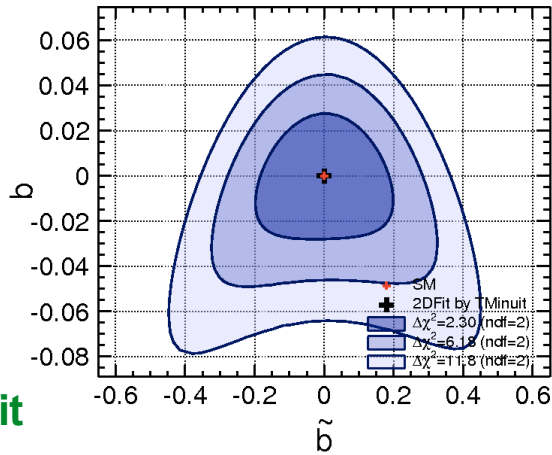
MELA

Reconstructed info eL0.8pR0.3

Lumi = 250

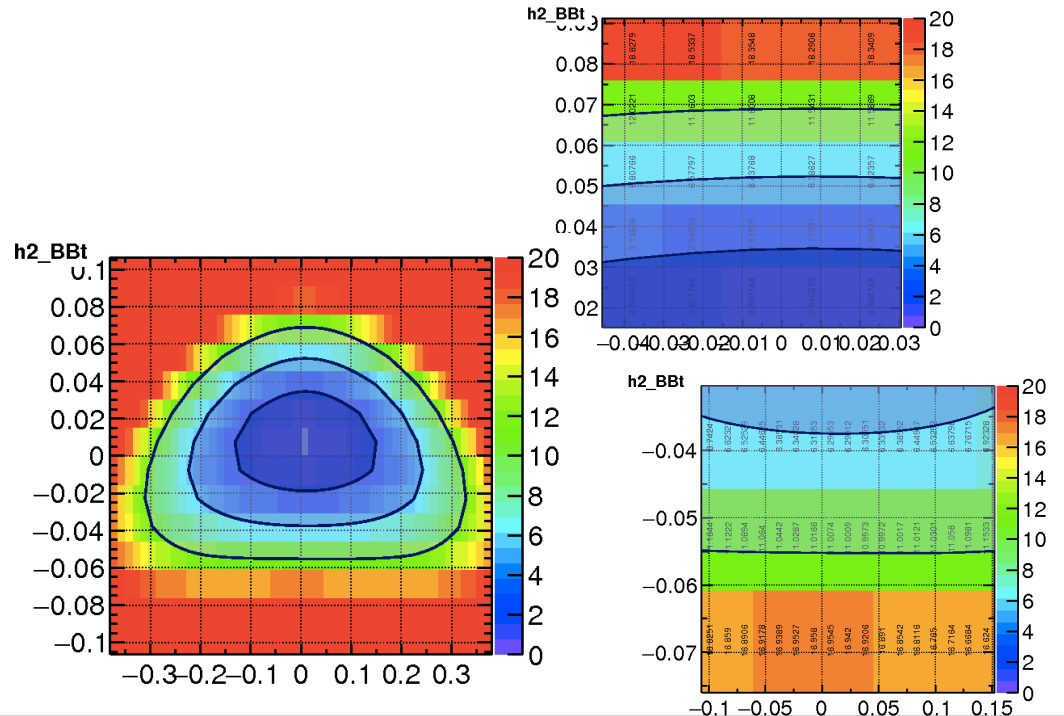
Kinematic constraint

- contours are estimated by a value of bins



bt direction 0.45 → 0.3

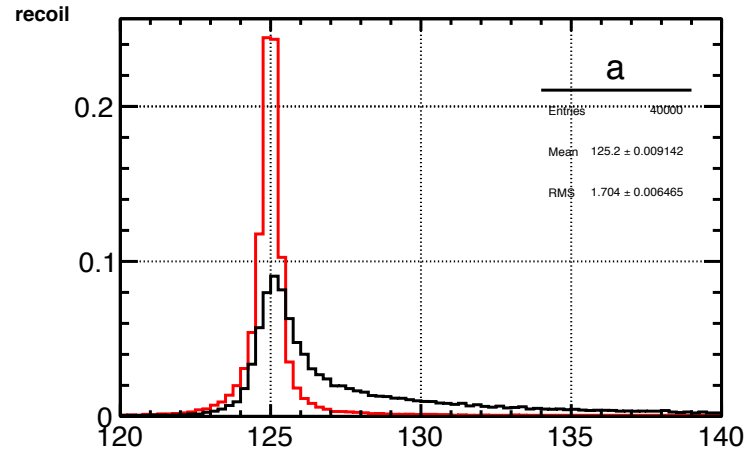
b direction (top) 0.62 → 0.7 bin width is wide?  
b direction (btm) 0.62 → 0.55



250 GeV ZH → mmH

generate events without ISR.

Recoil

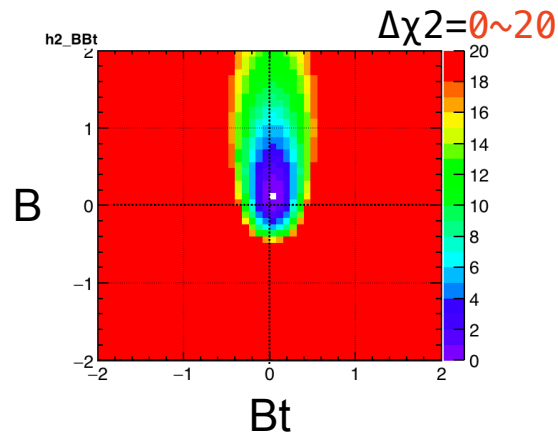


MELA

Reconstructed info LR

Lumi = 250

Kinematic constraint



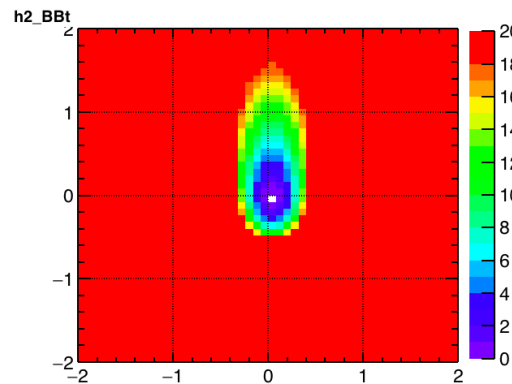
NoISR sample

MELA

Reconstructed info LR

Lumi = 250

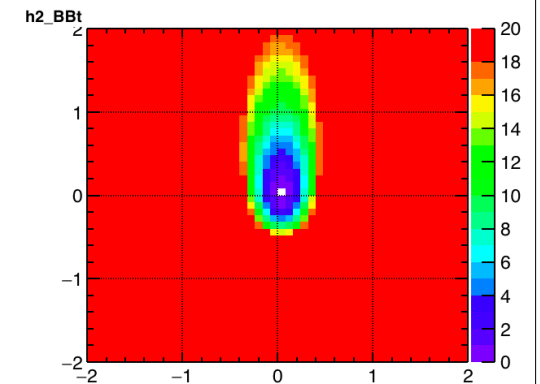
No Kinematic constraint



NoISR sample

MELA

MC info LR

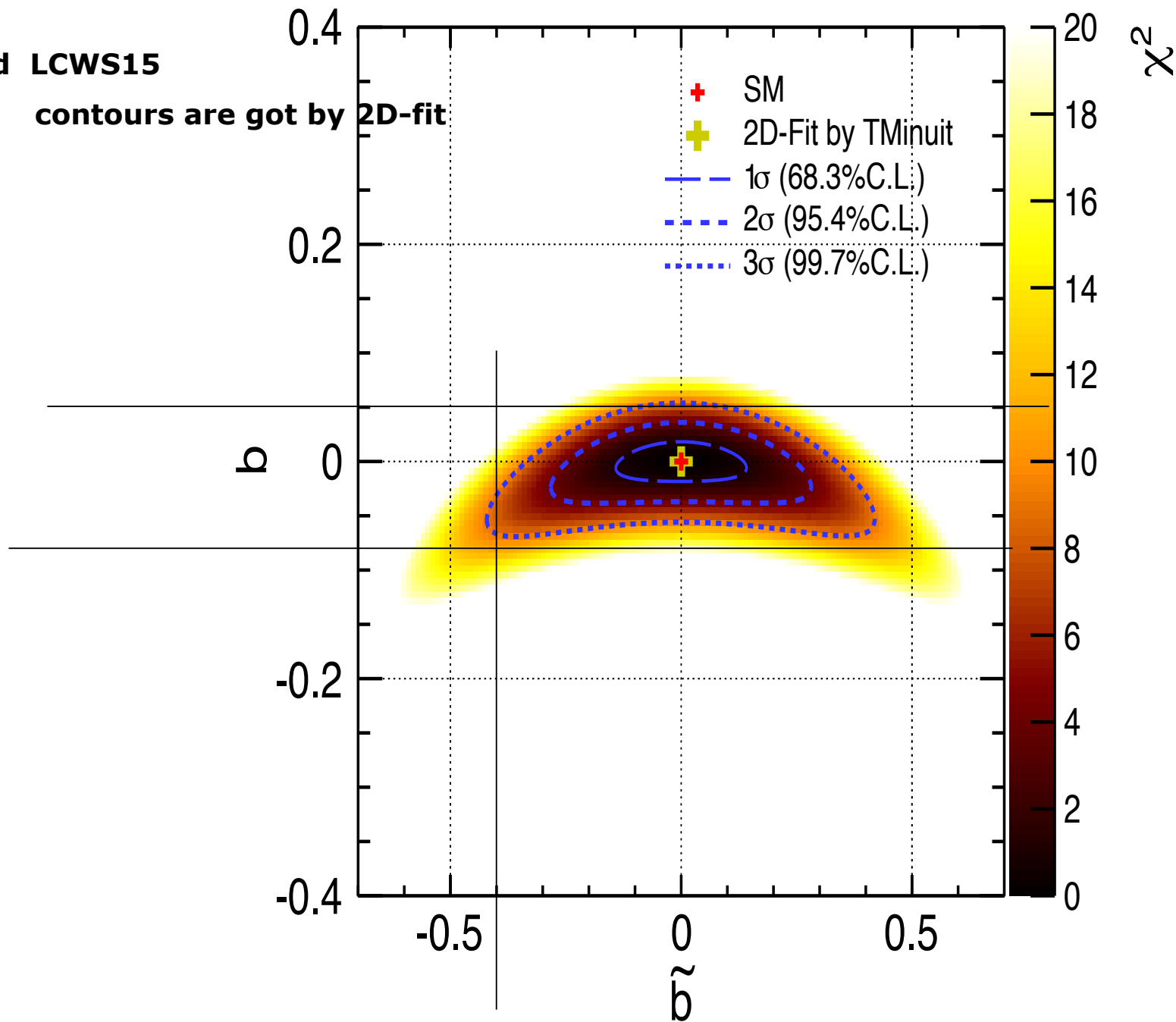


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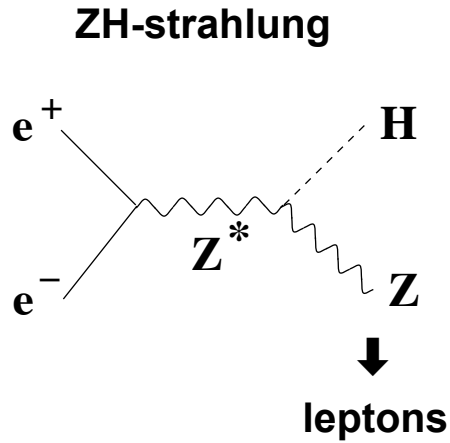
**2d LCWS15**

**contours are got by 2D-fit**

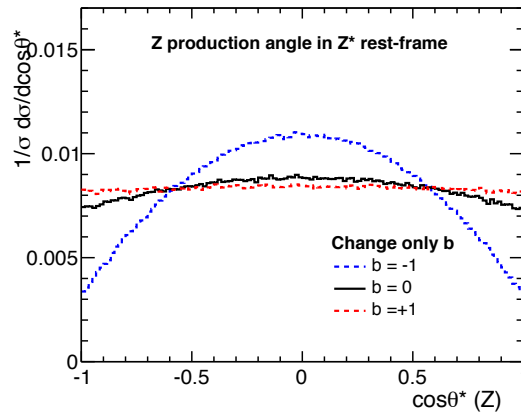


# Difference of Angular Distribution.

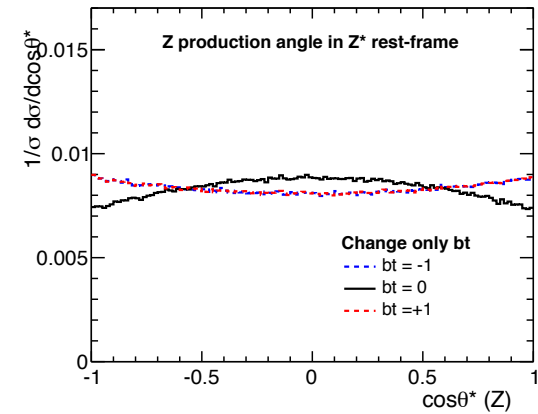
$$\mathcal{L}_{HVV} = 2M_V^2 \left( \frac{1}{v} + \frac{a}{\Lambda} \right) HV_\mu^+ V^{-\mu} + \frac{b}{\Lambda} HV_{\mu\nu}^+ V^{-\mu\nu} + \frac{\tilde{b}}{\Lambda} H \epsilon^{\mu\nu\rho\sigma} V_{\mu\nu}^+ V_{\rho\sigma}^-$$



Change "b" to  $\pm 1$



Change "bt" to  $\pm 1$



— SM  
— -1  
— +1

