

vvh 1TeV study for DBD

ILC Physics and software meeting

Nov. 16 2012

H.Ono (NDU)

Status of Higgs study

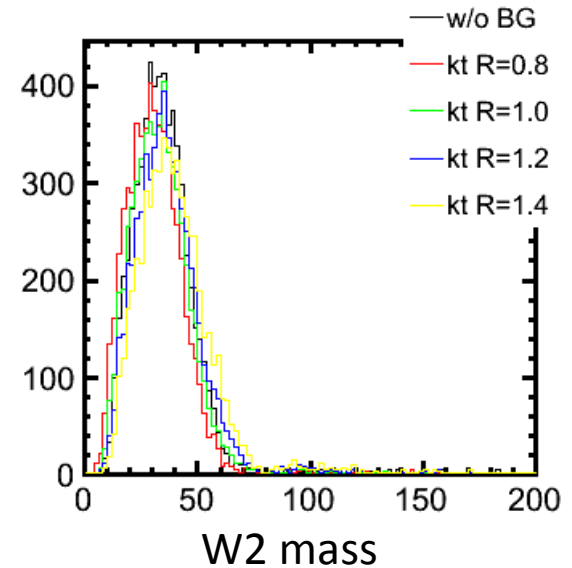
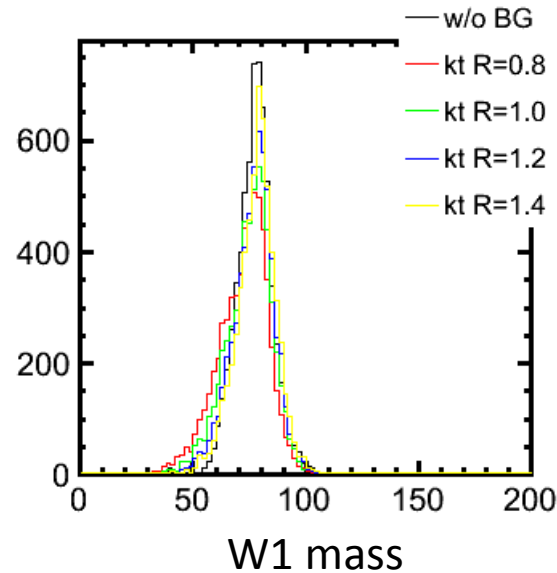
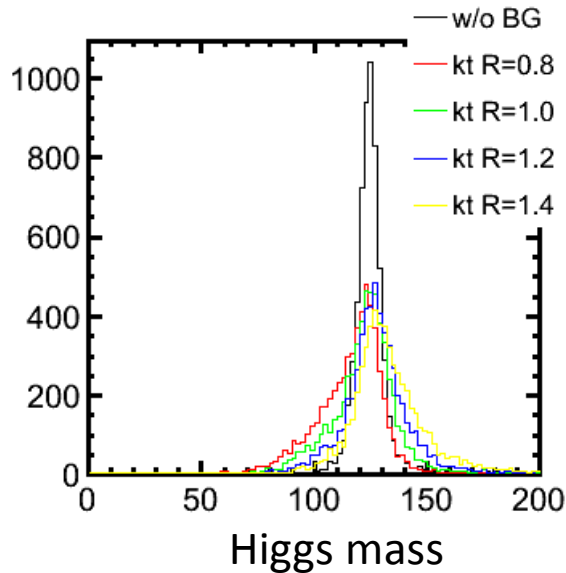
- Higgs BR study paper
 - Comments came last week and now preparing reply for each comment
 - Beam polarization benefit and effect to result
 - Template fit parameter (free or fix)
 - English correction by native speaker
 - Daniel-san accept to read and correct
- DBD benchmark chapter
 - Now revise with Tino by Nov. 18 to send Mikael

Status and to do list

- $h \rightarrow bb, cc, gg$ channel
(Preliminary results are obtained with template fitting)
 - Increase BG statistics (sznu_sl are available)
 - Check 3f BGs (simulated samples are available)
- $h \rightarrow WW^* \rightarrow 4j$ channel
(Preliminary result will come soon)
 - Optimize kt R parameter for 4 jet reconstruction (now)
 - Improve BG reduction and $h \rightarrow$ others suppression
- $\gamma\gamma \rightarrow$ hadron BG suppression
 - Check more detail with PFO based study (kt clustering)

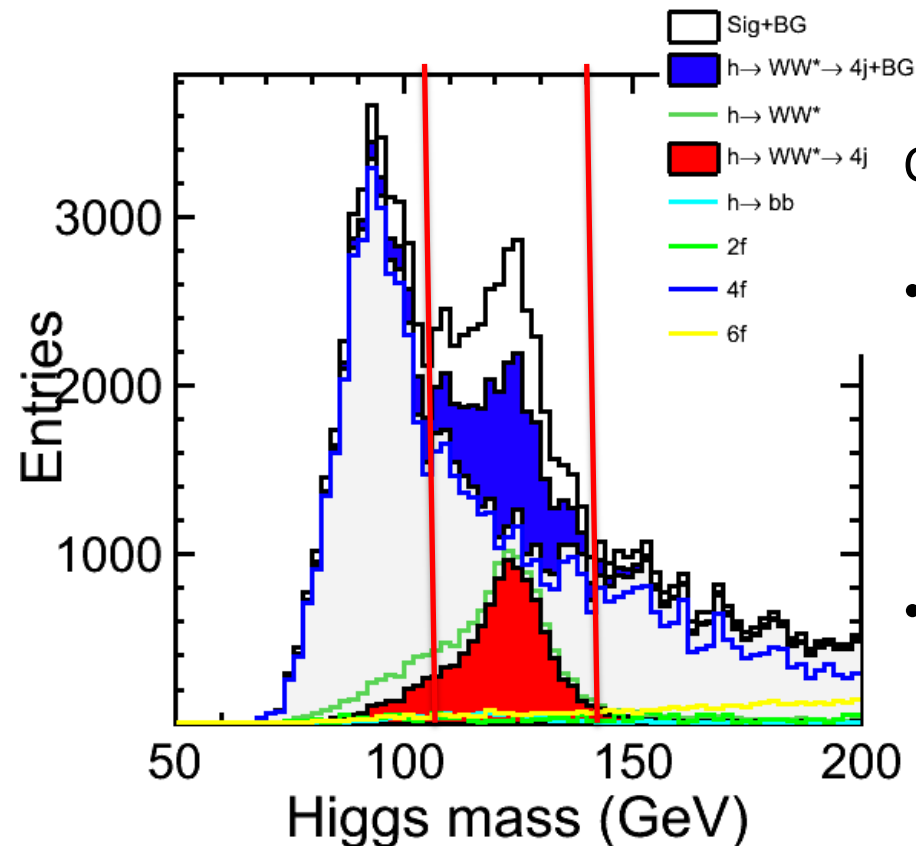
Treatment of aa background

$h \rightarrow WW^* \rightarrow 4j$ channel reconstruction with diff. R parameters



Reconstructed Higgs mass distribution is shifted with R
→ Check also other variables for further improvement

What to do in $H \rightarrow WW^*$



Cut based preliminary result will obtain soon.

- Need to reduce BG fluctuation with increasing the 4f BG statistics
→ Already simulated/reconstructed, need to reprocess them.
- Need to improve for further reduction especially in $h \rightarrow$ others channel