ZH branching ratio study

ILC physics and software meeting
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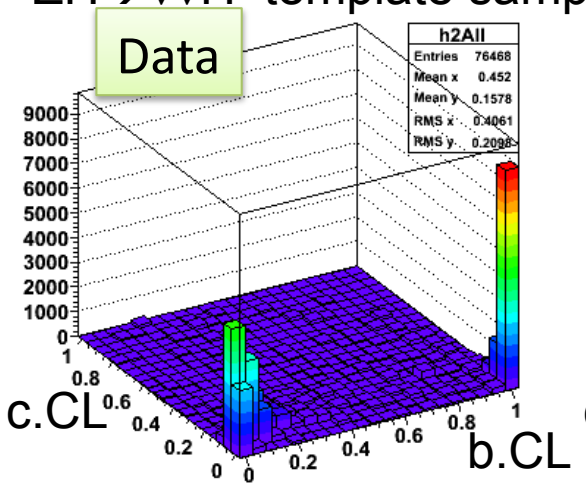
H. Ono (NDU)

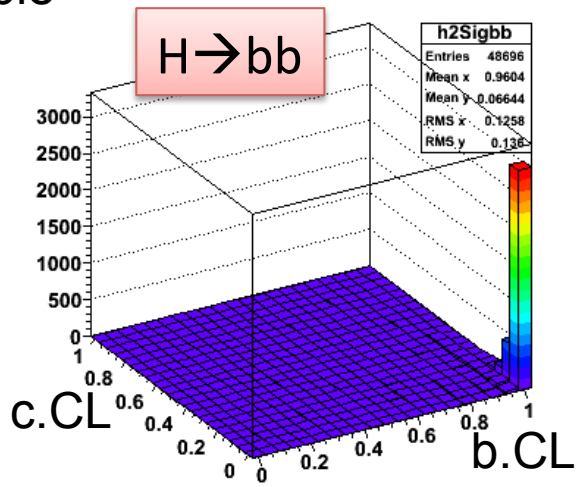
Current status

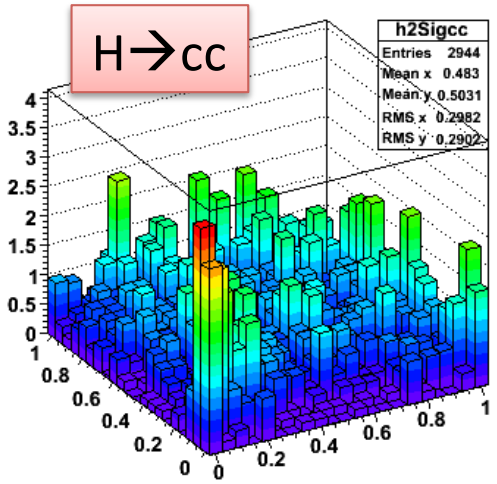
- 250 GeV sample analysis
  - H→WW/gg template sample has prepared and apply the template fitting to estimate the H→WW/gg branching fraction measurement accuracy.
- 350 GeV sample analysis
  - File transfer might be completed
  - Analysis re-start after the power outage
- Prepae JPS presentation slides

Template sample of flavor-likeness C.L.

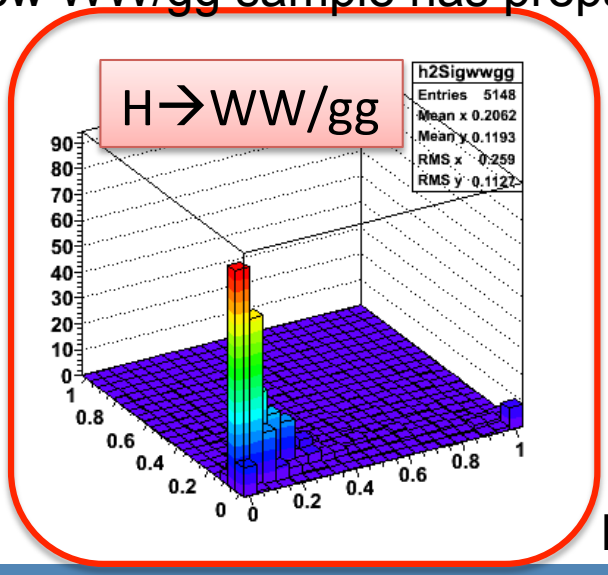
ZH→νν̄H template sample

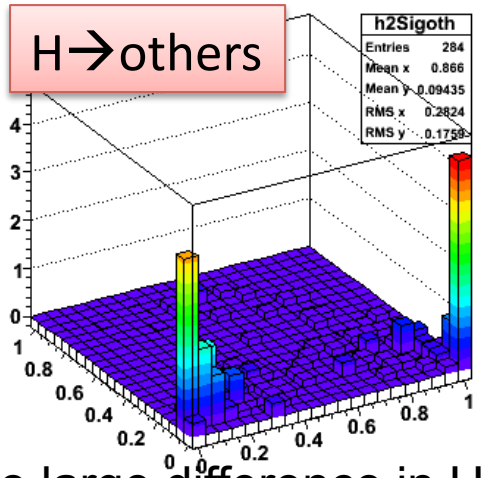


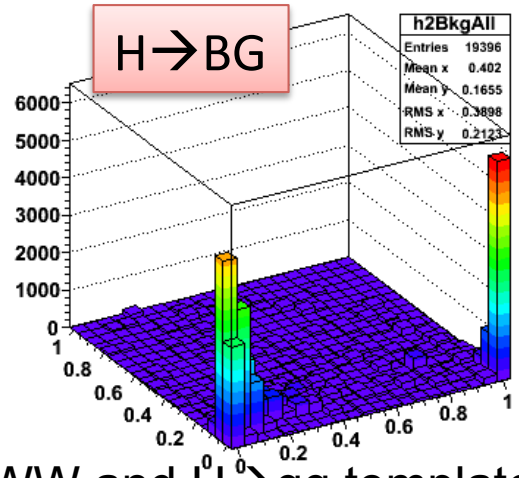




New WW/gg sample has prepared



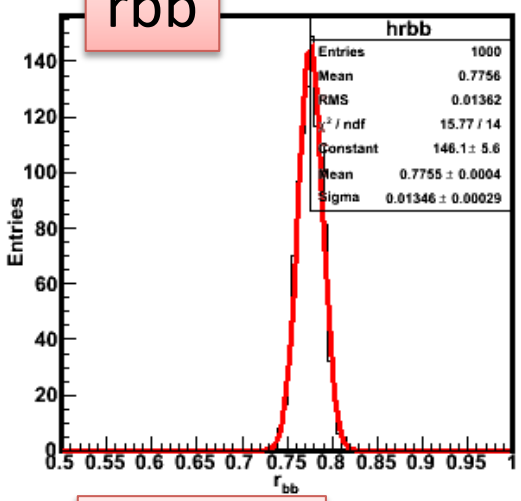




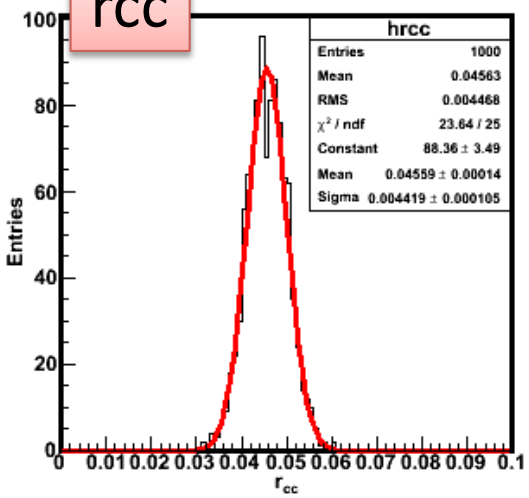
No large difference in H→WW and H→gg template

H→WW/gg branching ratio measurement

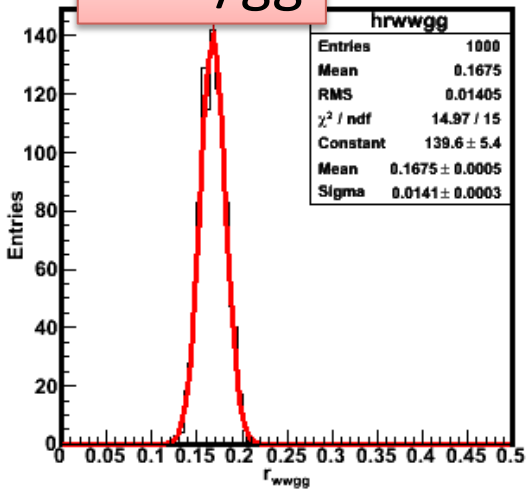
rbb



rcc



rww/gg



Fitted distribution reproduce true ratio

type	fitted	true ratio
rbb	0.852+-0.009	0.852279
rcc	0.0523+-0.004	0.0523036
rww/gg	0.0902+-0.0083	0.0900058

Fitting reproduce the true fraction

Measurement precision of BR

	ZH→nnH	ZH→qqH	ZH→μμH	ZH→eeH
rbb	1.01+-0.02 %	1.74+-0.04 %		
rcc	7.89+- 0.21 %	9.69+-0.23 %		
rww/gg	9.23+- 0.23 %	8.41+-0.18 %		

Relative BR	ZH→νν̄H	ZH→qqH	ZH→μμH	ZH→eeH
BR(cc)/BR(bb)	7.95 % (0.070+- 0.006)	9.85 % (0.055+-0.005)		
BR(WWgg)/BR(bb)	9.28 % (0.269+-0.025)	8.59 % (0.294+-0.025)		

Template samples # of bins = 40

Now in progress of llH mode

Next step : Summarize every analysis results, need to check w/o C.L. sample