Comparison with SiD results

ILD & SiD joint analysis meeting

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Current status

- Now vvh analyses try to understand the discrepancy between SiD and ILD

- SiD results looks worse compare with our 500 fb^{-1} result using 1 ab^{-1}.

- BG samples are not same
  - ILD only use 2f, 4f, 6f but SiD use other SM BGs
    aa_2f, aa_4f, aa_minijet, 1f_3f, 5f are not included

- SiD used 1 ab^{-1} (-0.8, +0.2)
 → Change to use 500 fb^{-1} LR(-+0.8, +-0.2)

After including 1f_3f

Large cross section but only with small statistics, weights 100~1000

Same cut parameters and not optimized for these samples
Preliminary results for 500 fb-1 eL(-0.8, +0.2)

	ILD		SiD	
Int. lumi	500 fb^{-1}	500 fb^{-1}	500 fb^{-1}	1 ab^{-1}
P(e-, e+)	(-0.8, +0.2)	(-0.8, +0.2)	(-0.8, +0.2)	(-0.8, +0.2)
h→bb	0.45%	0.45%	0.82%	0.56%
h→cc	4.4%	4.6%	10%	6.9%
h→gg	3.2%	3.8%	4.4%	3.2%
h→WW*	2.2%		6.3%	3.6%

h→bb after hclikeness>0.24 cut
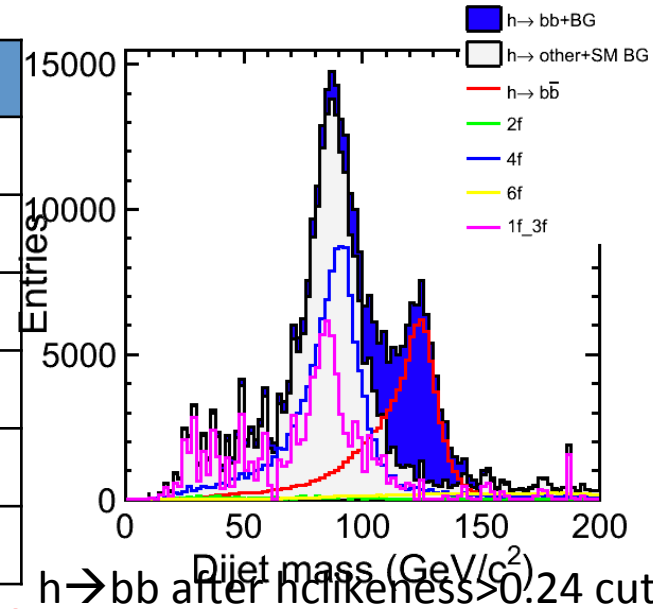
Very preliminary with small statistics of 3f

Effect will large from 3f BG, Need to clarify on h→WW*

I should include and increase these BGs→ Also re-check with stdhep sample

Efficiency of h→bb

- Efficiency of h→bb looks different between ILD and SiD
  - SiD cuts case looks worse efficiency for h→bb
  - SiD cut: Eff=18.5% for h→bb
  - ILD cut: Eff=47.0% for h→bb
  - → Tighter cut is applied in SiD for assuming full backgrounds
  - Need to include other BGs, aa_xxyy is suggested.