

# Higgs Branching ratio study

ILC physics and software meeting

Jun. 10. 2011

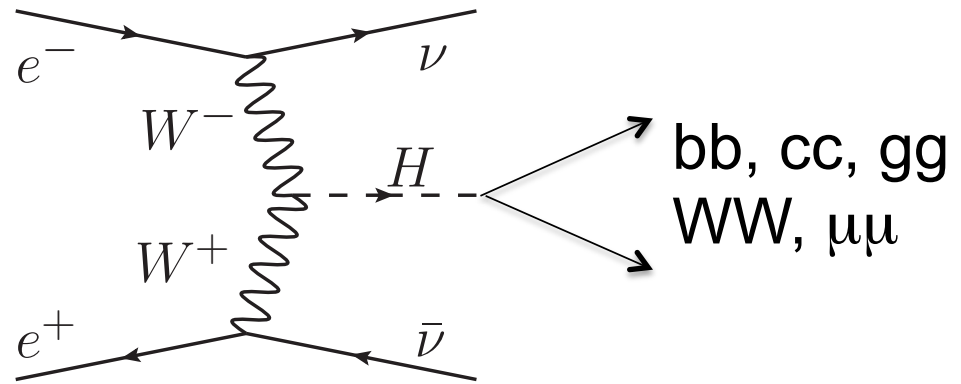
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# Current status

- Writing paper to publish
- Final results consistency check
  - Template fitting results
  - Binning dependency
- DBD request preparation
  - Need analysis group for Higgs BR DBD study?
  - No candidate at this moment

# $\nu\nu H$ @ 1 TeV for DBD

Mainly production process: W-fusion  
No Z mass information



$H \rightarrow bb, cc, gg$

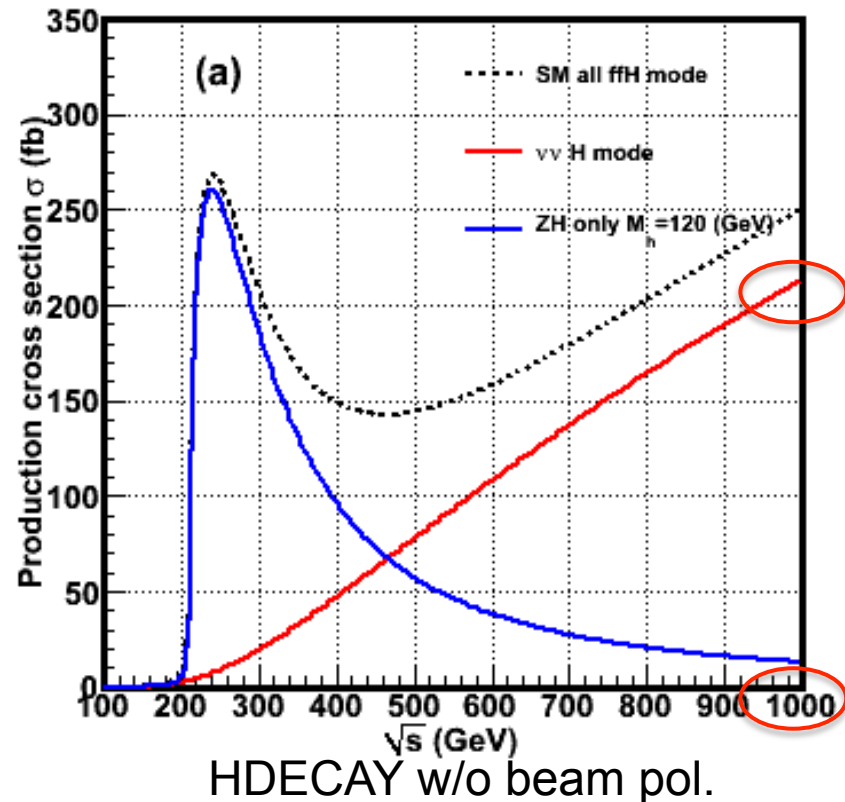
Di jet reconstruction (Invariant mass)

$H \rightarrow \mu\mu, WW$  (qqqq, lvlv, lvqq)  
(Di lepton ID, W ID?)

ll, qq background (2f)

WW, ZZ background (4f)

tt background (6f)

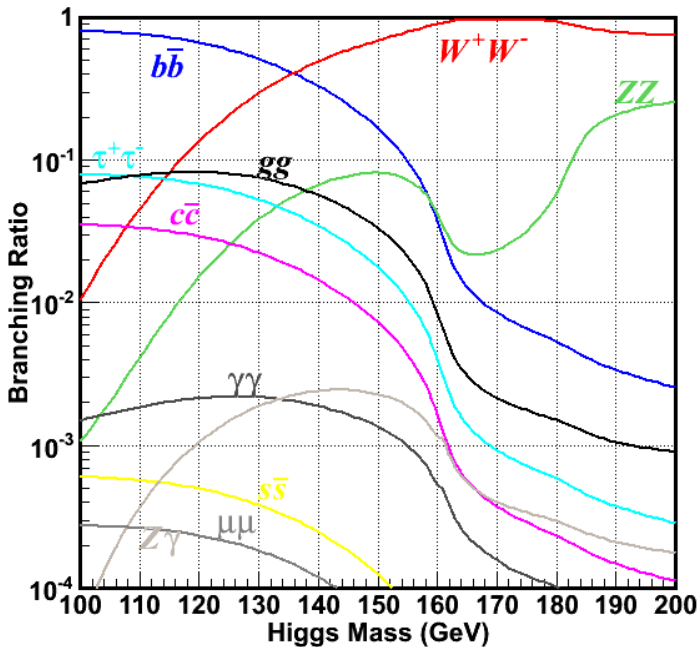


DBD benchmark process

$\sigma * BR$  for  $H \rightarrow \mu\mu, bb, cc, WW, gg$

# DBD sample for $\nu\nu H$ @1TeV study

- 2f, 4f sample on SM (WW, ZZ), qq background
- ll as  $H \rightarrow \mu\mu$  background?  $E_{\text{track}}$ , di-lepton mass cut
- 6f (tt)



	Cross section	Process
$\nu\nu H$	215 fb	$ee \rightarrow \nu\nu H$
WW	2695 fb	$l\nu qq, qqqq, llqq, \nu l\nu l$
ZZ	151 fb	$\nu\nu qq, qqqq, \nu ll, ll ll$
qq	624 fb	qq
tt	167 fb	tt
ll	40457 fb	ll

in MadGraph

Estimate the required samples for template fitting