

$h \rightarrow \tau^+ \tau^-$ BR Study
Current Status (Short Report)

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First Results of 500 GeV Analysis

- There are still lots of rooms of improving/checking, but anyway I obtained the first results of 500 GeV with aa_2f background for all signal processes.

First Results of 500 GeV Analysis

results with including aa_2f

	$q\bar{q}h$	$\nu\bar{\nu}h$	e^+e^-h	$\mu^+\mu^-h$
Cut-based	20.5σ (4.9%)	11.7σ (8.5%)	3.2σ (31.3%)	5.0σ (20.0%)
TMVA	21.2σ (4.7%)	13.6σ (7.4%)	3.2σ (31.2%)	5.7σ (17.6%)



Due to the low statistics of $\ell^+\ell^-h$, these processes are not contribute so much.

Next Steps

- LCWS2013 proceedings: ongoing
- Check and more optimization in 500 GeV, mainly $q\bar{q}h$ and $\nu\bar{\nu}h$ (including MC statistics check)
- Separate Zh process and WW -fusion process in $\nu\bar{\nu}h$ signal process
- Tau finder study
- Study of 250 GeV with Higgs mass of 125 GeV