LHT status report on $e^+e^- \rightarrow e_H^+ e_H^-$ @1TeV

11.12 physics meeting

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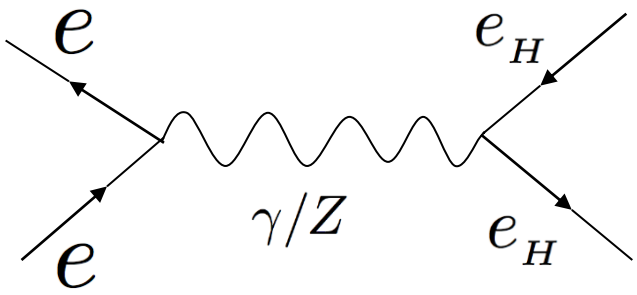
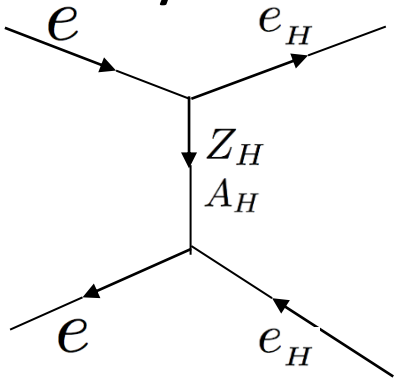
Previous report

Aim of this study:

Evaluate ILC's sensitivity on κ by measuring the mass of e_H .





$m_{eH}=\sqrt{2}\kappa f=410GeV$

Analysis mode

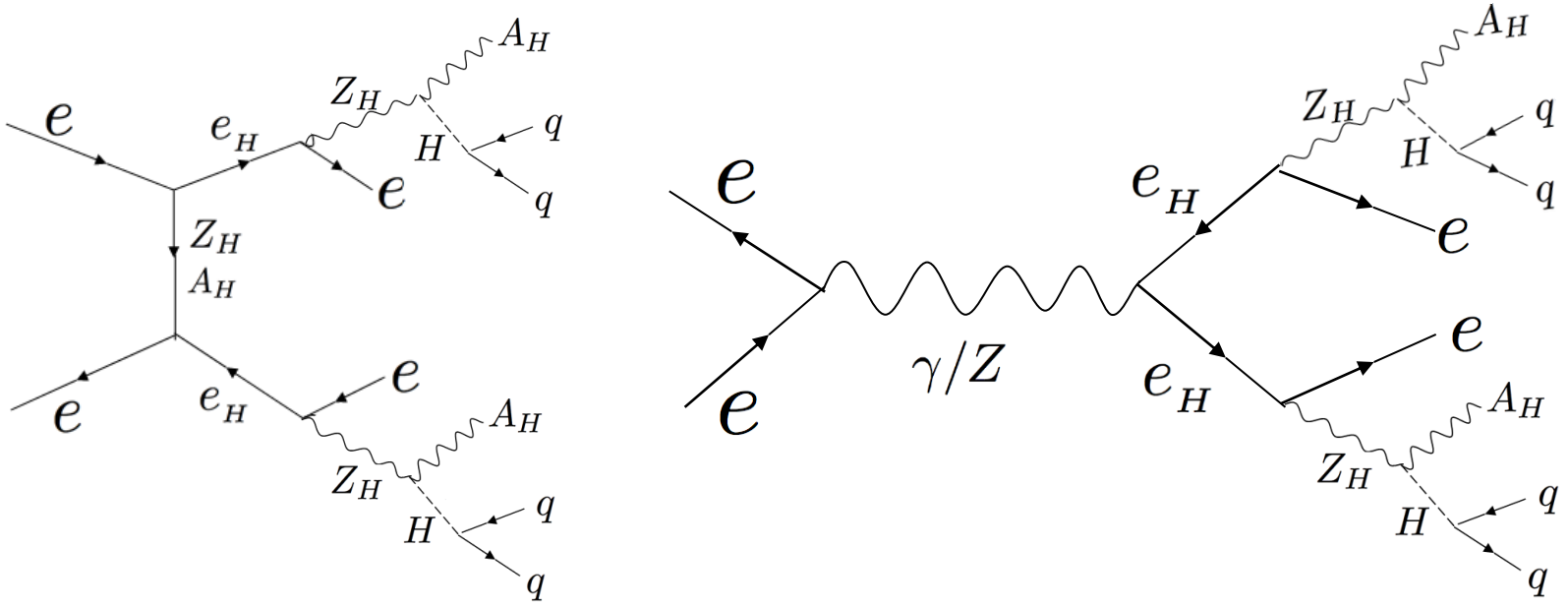
There are 3 ways e_H can decay.

Generator of $e_H \rightarrow eA_H$ was built and is being studied.

Generator

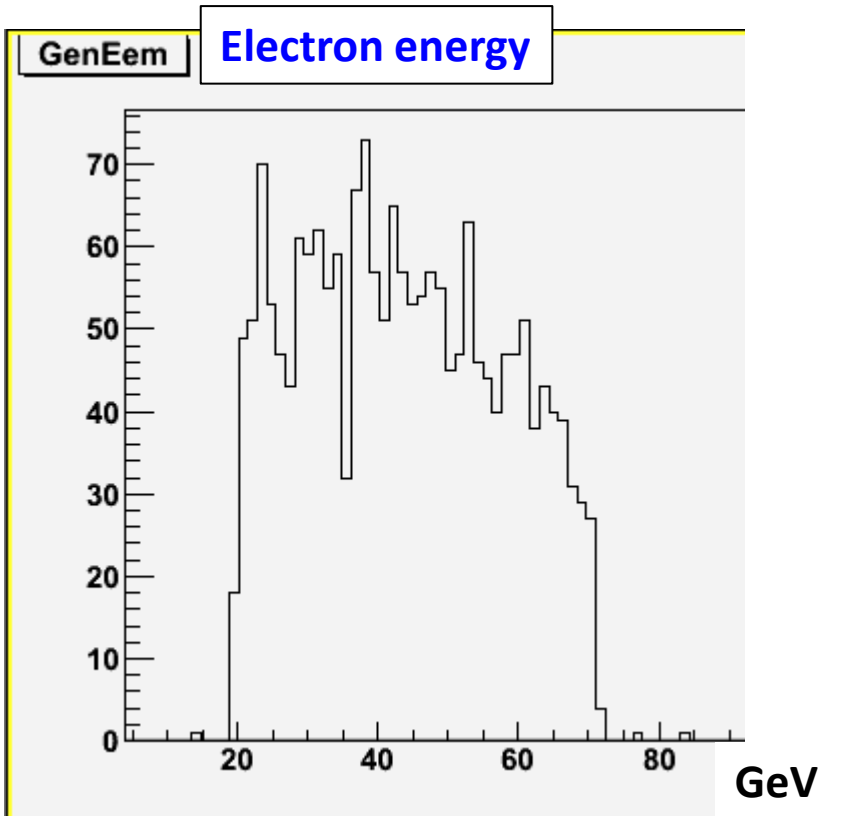
Generator of $e_H^+ e_H^- \rightarrow e^- Z_H e^+ Z_H$ was also built.

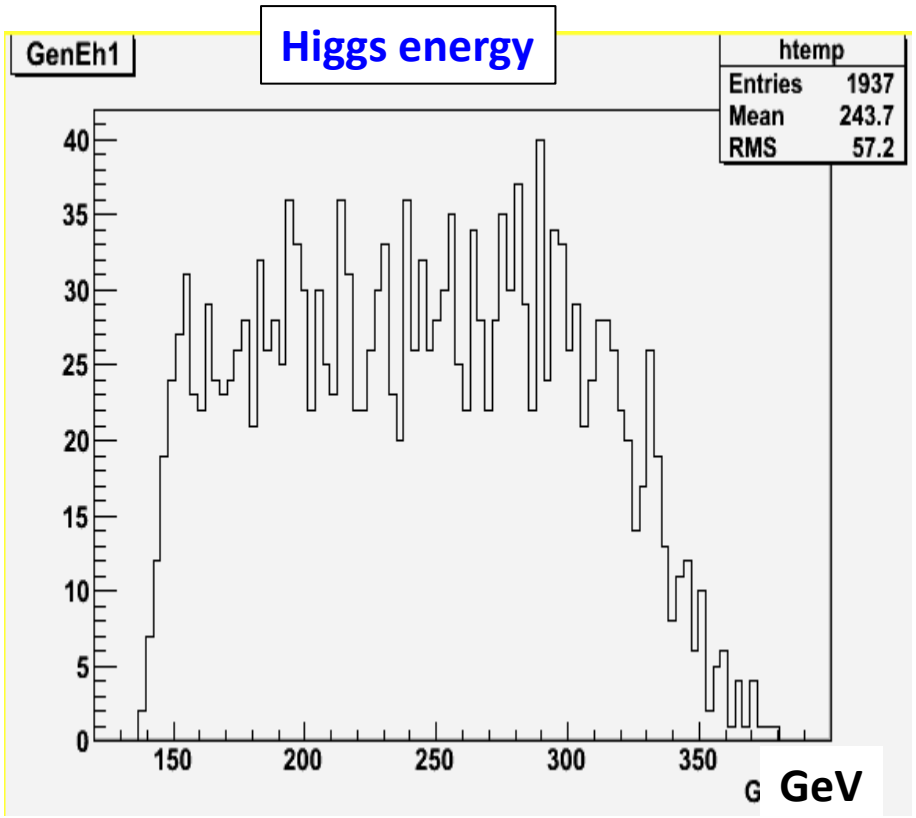
Cross section: 3.88 fb



Generator function check

- Electron energy & Higgs energy seems consistent.





plan

- Build generator of $e_H e_H \rightarrow e\, Z_H\, e\, A_H$.
- Proceed analysis on $e_H\, e_H \rightarrow e A_H e A_H$ & $e_H e_H \rightarrow e Z_H e Z_H$ using completed generator.
- In $e_H e_H \rightarrow e Z_H e Z_H$ analysis the SM backgrounds that are being considered are…(2e + 4jet)

  eeWW , eeZZ, ZZZ, WWZ