

Higgs decay to WW^* in HZ

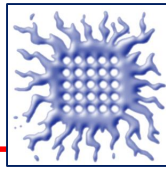
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ILD analysis and software meeting 5. April 2017.



$H \rightarrow WW^* \rightarrow qqqq$ in Higgsstrahlung at 500 GeV

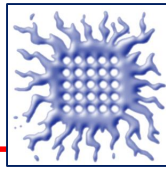


- ❑ Analyzed HZ fully hadronic decay: $Z \rightarrow qq$, $H \rightarrow WW^* \rightarrow qqqq$ at 500 GeV
- ❑ Obtained the result using full simulation, polarization included, and all relevant backgrounds produced in e^+e^- collisions are considered
- ❑ LCWS16 proceedings

Finalize the study:

- ❑ Suggestion was to refine the analysis by adding $e\gamma$, $\gamma\gamma$ background
- ❑ Any other suggestions ?
- ❑ Publication planned

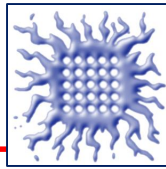




$H \rightarrow WW^* \rightarrow qqqq$ at 250 GeV

- Junping suggested revision and completion of $H \rightarrow WW^*$ analysis which were preliminary partially addressed by Hiroaki earlier
- Analyses:
 - $Z \rightarrow ee, \mu\mu, H \rightarrow WW^* \rightarrow qqqq, lvqq, lvlv$
 - $Z \rightarrow qq, H \rightarrow WW^* \rightarrow qqqq, lvqq, lvlv$
- Started the dominant $H \rightarrow WW^* \rightarrow qqqq$ analysis
- Volunteers needed





Publication plan

- ❑ Analyzed HZ fully hadronic decay: $Z \rightarrow qq$, $H \rightarrow WW^* \rightarrow qqqq$ at 500 GeV
- ❑ Junping analyzed the same decay in WW-fusion at 500 GeV (not published, only LCWS13 proceedings)

Possible publication plan:

1. $H \rightarrow WW^* \rightarrow qqqq$ in Higgstrahlung at 250 and 500 GeV
(myself)

or

1. $H \rightarrow WW^* \rightarrow qqqq$ in HZ and WW-fusion at 500 GeV
(Junping and myself)
2. Paper with complete list of suggested $H \rightarrow WW^*$ decays 250 GeV
(Junping, volunteers, myself)

