Long-lived Stau

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Event selection

Main selection

slepton tracks == 2
Number of jets == 2
 for Y   < 0.004
E jet >= 5 GeV

result

5000 ➔ 1809event

Cut Statistics	hStat	
	Entries	42370
	Mean	5.294
	RMS	3.899

Kind of selection

Slepton tracks
(2219event)

N jets
(2155event)

E jets
(1817event)
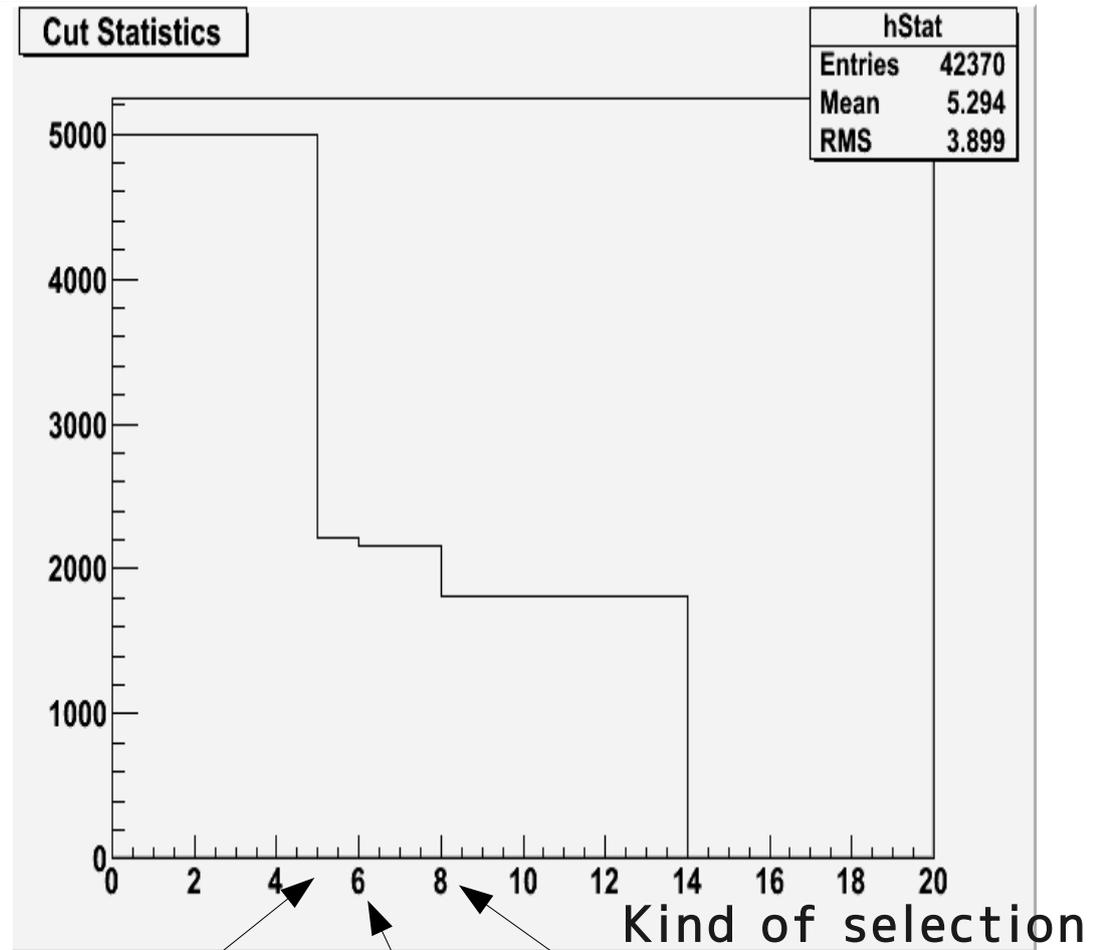
Background

Regarded background

$$e+e- \rightarrow ZZ$$
$$e+e- \rightarrow ZH$$ etc... $\longrightarrow$ 4 lepton

If ZZ or ZH cross section is smaller, BG is ignored
Calculate for ZZ mode and ZH mode
with MC simulation.

Generated numbers at $200 fb^{-1}$

$e+e- \rightarrow ZZ \rightarrow llll$ (5.197 fb) $\longrightarrow$ 1040 event

$e+e- \rightarrow ZH \rightarrow llll$ (7.046 fb) $\longrightarrow$ 1409 event

Neutralino mode   30.4 fb $\longrightarrow$ 6080 event

No polarization

Background

e+e- → ZZ → llll (5.197 fb)

e+e- → ZH → llll (7.046 fb)

No polarization

e+e- → ZZ → llll

1040 → 122event

hStat
Entries 6756
Mean 4.044
RMS 3.254
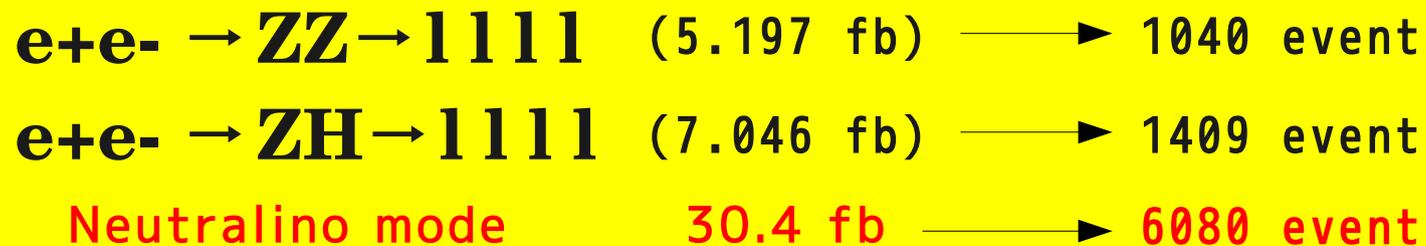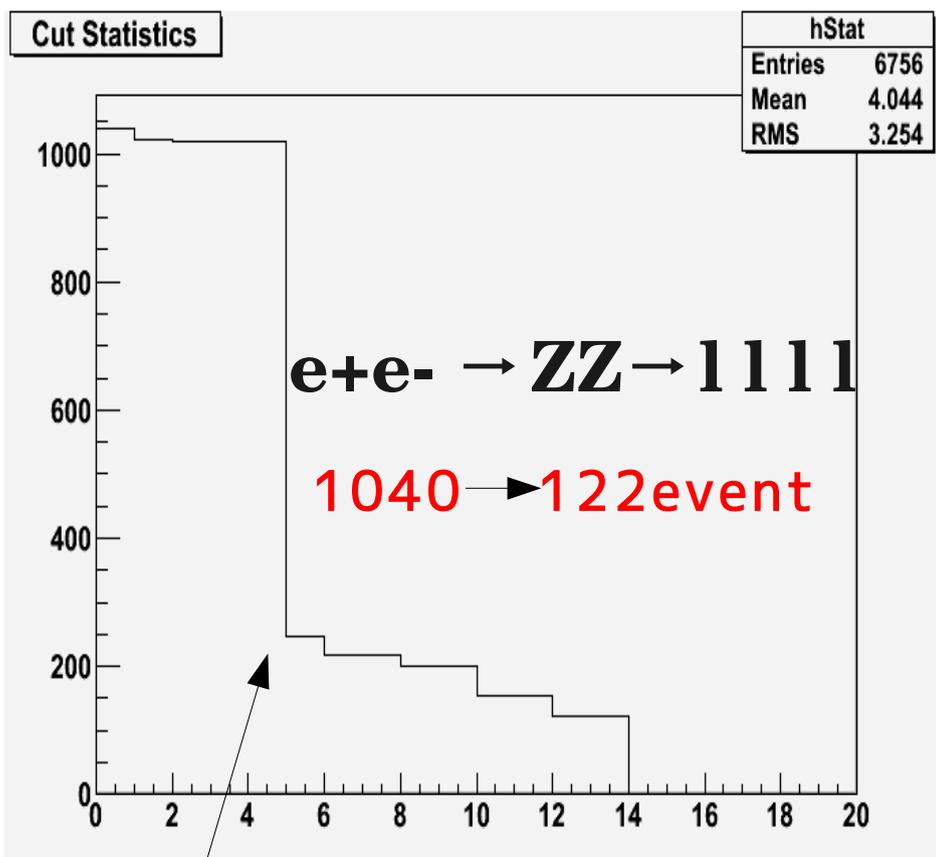
Slepton tracks (246event)

e+e- → ZH → llll

1409 → 119event

hStat
Entries 8716
Mean 3.731
RMS 3.024
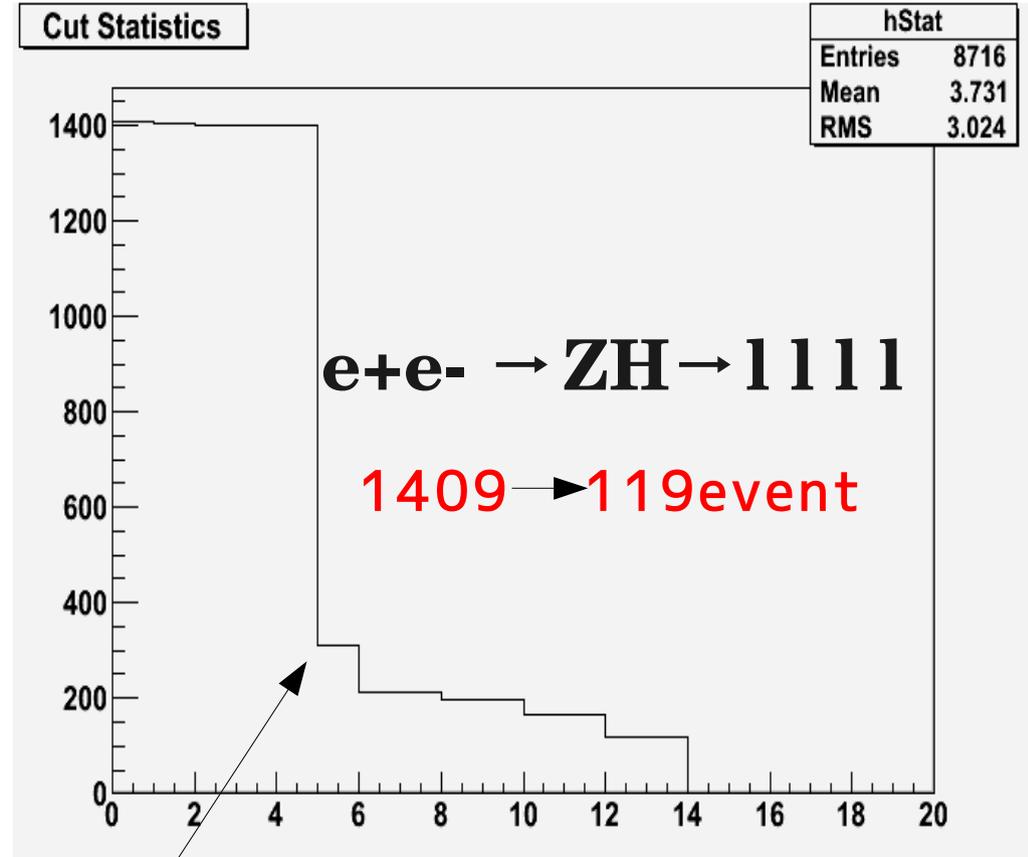
Slepton tracks (309event)

Summary & Plan

- Make a list of BG mode.
- Try to fix an event selection