

Status Report

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11 Mar 2014



Comparison of NC background

- Comparison of NCjjj and NCbbj
 - NCjjj : $p e^- \rightarrow e^- j j j /h$ QCD=99 QED=99
 - NCbbj : $p e^- \rightarrow e^- b b^{\sim} j /h$ QCD=99 QED=99
- 50fb^{-1} is assumed

Table of samples

	$\sigma(\text{pb})$	Number of samples	$\frac{N}{\sigma} (\text{fb}^{-1})$
NCjjj	83	4.2M	50.6
NCbbj	21	1.2M	57.1

Result

- Event number in signal region [100,130] GeV
 - $NC_{jjj} : 42.5 \pm 6.52$
 - $NC_{bbj} : 55.1 \pm 6.94$
- Numbers of NC_{jjj} and NC_{bbj} in signal region are almost same
- NC_{bkg} mainly consists of NC_{bbj} in signal region

back up

Table of setups

- $E_p=7\text{TeV}$, $E_e=60\text{GeV}$, 125GeV Higgs
- Constant b-tag efficiency for $|\text{Eta}|<3$
 - b-jet ID : 60%
 - c-jet mis-ID : 10%
 - light-jet mis-ID : 1%
- Use kt algorithm $\Delta R=0.9$
- Assume 50fb^{-1}

Table of samples

- Generator cut
 - CChbb, $p e^- \rightarrow \nu_l h j, h \rightarrow b \bar{b}$
 - ▶ For parton, lepton, photon $|\text{Eta}| < 10$
 - CCbkg, $p e^- \rightarrow \nu_l j j j / h$
 - ▶ For parton, lepton and photon, $|\text{Eta}| < 10$
 - ▶ For parton, $P_T > 10 \text{ GeV}$
 - ▶ More than one $M_{jj} > 60 \text{ GeV}$ parton pair
 - NCbkg, $p e^- \rightarrow e^- j j j / h$
 - ▶ For parton, lepton and photon, $|\text{Eta}| < 5$
 - ▶ For parton, $P_T > 10 \text{ GeV}$
 - ▶ For lepton, $P_T > 1 \text{ GeV}$
 - ▶ More than one $M_{jj} > 60 \text{ GeV}$ parton pair

Table of cuts

Nbjet	≥ 2
Njet	≥ 3
missing ET(GeV)	> 20
total ET(GeV)	> 100
Nelectron	0
$Q^2(\text{GeV}^2)$	> 400
y	< 0.9
light jet η	> 2
W mass(GeV)	> 130
top mass (GeV)	> 250