Weekly Report

Xin Shuiting

Producted gn2 with hhmlfw2 (personal one)

- re-calculate MC weight
- Add Single and dilep Triggers(follow tth defination)
- Jet information, pt,eta,phi,E,passOR
 - M(ll), the invariant mass of two same-signed leptons;
 - *MET*, missing transverse energy;
 - $M(jj)^W$, the invariant mass of two closest jets among all selected good jets;
 - $M(l_1 j j)$, the invariant mass of leading lepton and two closest jets;
 - *M*(*all*), the invariant mass of all selected objects;
 - M_T , the transverse mass of all selected objects;
 - $\Delta R_{min}(\ell_1, j)$, ΔR distance between leading lepton and the closest jet;
 - $\Delta R_{min}(\ell_2, j)$, ΔR distance between sub leading lepton and the closest jet;
- basic cut to slim: lep_pt>10GeV, match at lest one trigger

Almost ready to use

• Data set size

Blinding strategy

- Data is not used in any way in the optimization strategy from preselection to the signal region.
- The optimization is based on the existing MC simulations and samples of the fake estimate.
- Data is removed for any of the optimization working point if it satifies the optimized signal region criteria.

- Go back to bkg estimation
- CR and SR definition? Next page
- Most important thing : BLIND data when doing optimisation

#jets choices Non-res signal jet pt

Read gn1 signal samples, select two same sign lepton (will apply tight selection)

Number of jets	463303
Number of 2jet	114
Number of 3jet	285
Number of 4jet	400549

signal dominants in >=4 jets region



Signal Region: 2tight ss & Njet>=3 Control Region: 2tight ss & Njet =2

Fake factor method apply to control region(Njet == 2)

	ee	mu mu	e mu
Fake	109.98pm8.72	63.71pm15.27	115.72\pm14.97
promptss	256.628/pm2.55177	414.38/pm2.88204	666.071/pm8.07058
vgamma	69.5422/pm10.8432	0.623612/pm0.594433	124.703/pm12.4537
qmisid	326.139/pm0.774867	~	13.1619/pm0.173581
total	760/pm14.24	477.71/pm15.55	918/pm17.20
data	827/pm28.7228	474/pm21.7715	1102/pm33.1964

For this version , complemented missing dsids , doesn't include trigger

Also events yields after preselection can be obtained

Summary and todos

- Got the hang of skimming samples, gn1->gn2, grid running after practise
- Once new sample available re do bkg estimation
- Next step : systematic uncerntainty before optimizing?
- Prepare involved code of the above step.
- Graduate student training ~ 1 week

Back up

Triggers

For 2015 data set: the following triggers are used with an "OR" boolean operator:

- HLT_mu20_iloose_L1MU15
- HLT_mu50
- HLT_e24_lhmedium_L1EM20VH
- HLT_e60_lhmedium
- HLT_e120_lhloose
- HLT_2e12_lhloose_L12EM10VH
- HLT_e17_lhloose_mu14
- HLT_mu18_mu8noL1

For 2016 data set: the following triggers are used with an "OR" boolean operator:

- HLT_mu24_ivarmedium
- HLT_mu50
- HLT_e24_lhtight_nod0_ivarloose
- HLT_e60_lhmedium_nod0
- HLT_e140_lhloose_nod0
- HLT_2e17_lhvloose_nod0
- HLT_e17_lhloose_nod0_mu14
- HLT_mu22_mu8noL1