Huijun’s status

2014/11/26

Cut efficiency on signals

When it is in a boost frame the electron selection efficiency will drop a lot

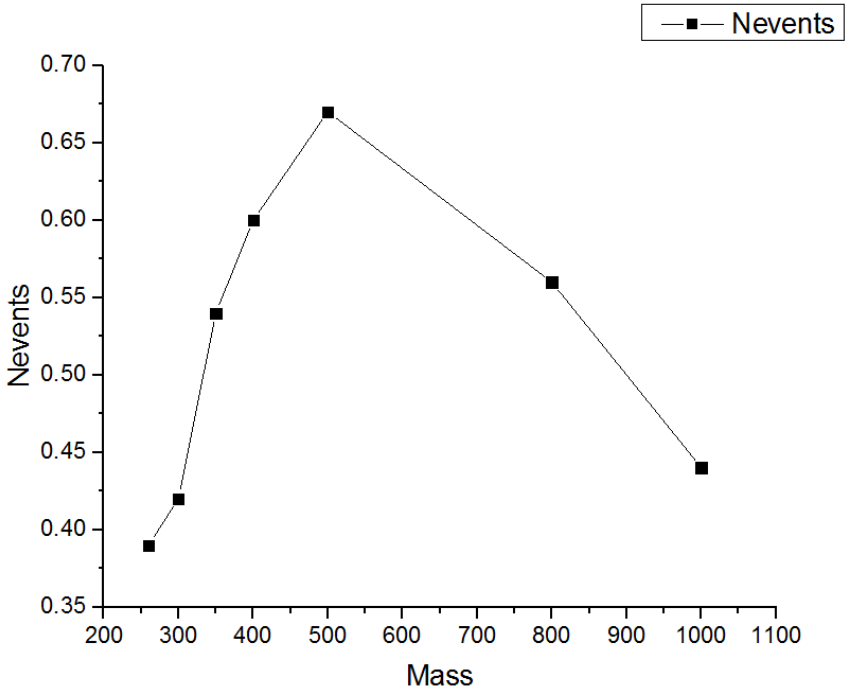
	SM	Resonant						
	Higgs pair	260 GeV	300 GeV	350 GeV	400 GeV	500 GeV	800 GeV	1000 GeV
Total	100%	100%	100%	100%	100%	100%	100 %	100 %
Author	44.52%	41.87%	42.63%	43.53%	44.17%	45.26%	47.15%	47.83%
Electron η	44.32%	41.67%	42.41%	43.33%	43.96%	45.01%	46.93%	47.62%
Electron p_T	17.28%	14.10%	14.99%	15.93%	16.66%	18.07%	20.92%	22.23%
Electron ID	2.22%	2.43%	2.41%	2.33%	2.26%	2.23%	2.05 %	1.96 %
Electron isolation	1.71%	2.10%	2.05%	1.91%	1.81%	1.65%	1.12 %	0.93 %
Electron revmoval	1.51%	1.90%	1.83%	1.71%	1.61%	1.47%	0.98 %	0.77 %

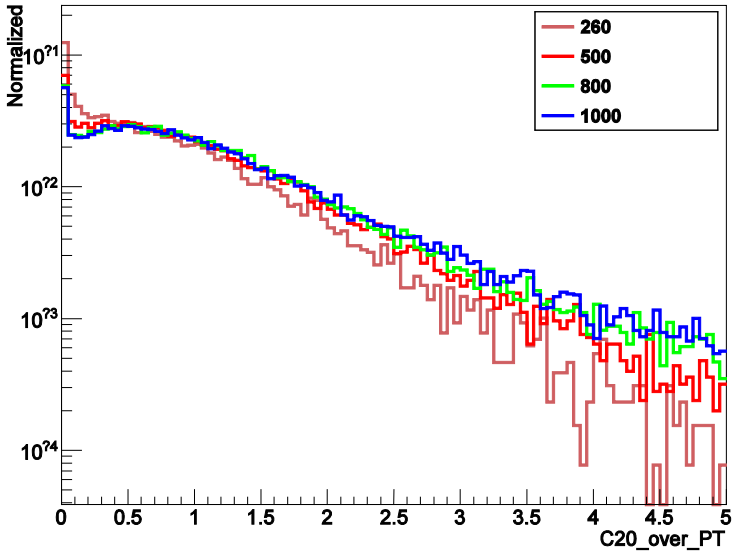
Table 4: Efficiencies for electron selections at object level.

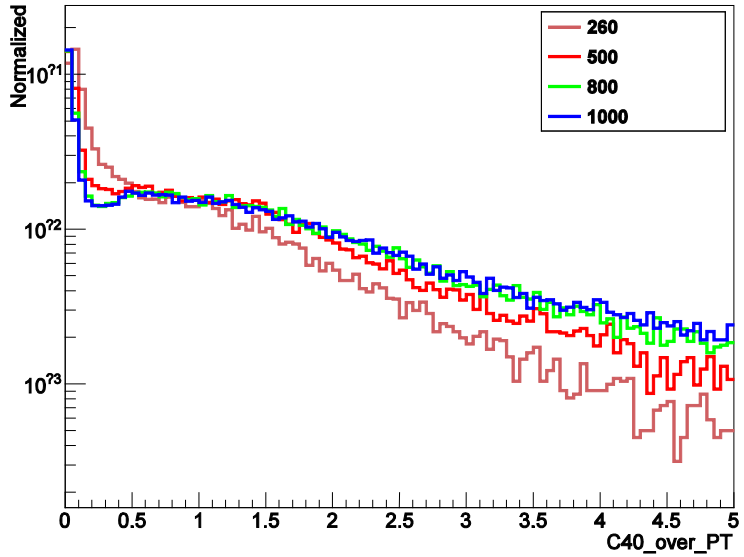
Isolation of electron

The definition of electron isolation is :

ETcone40/el_pT < 0.2 || Ptcont20/el_Pt <0.15





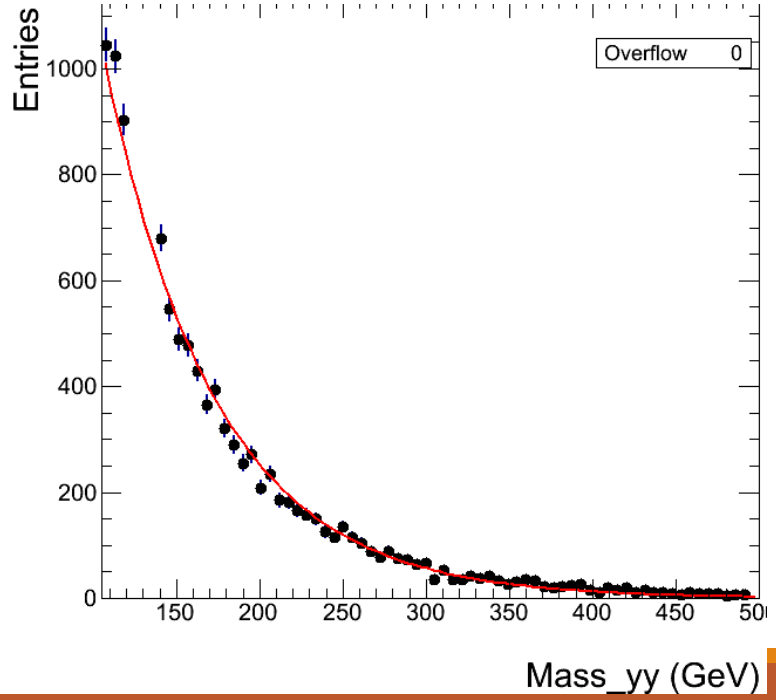


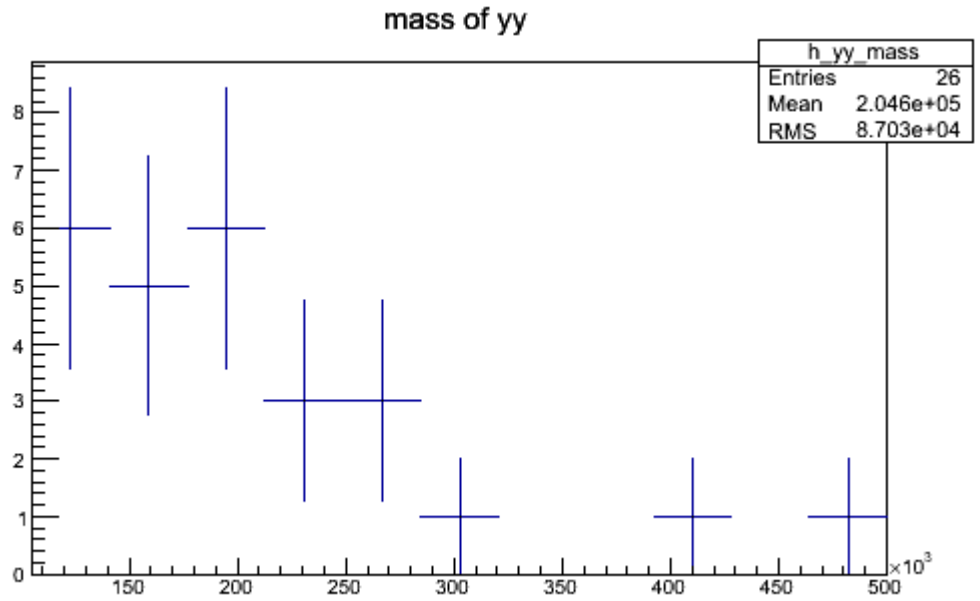
The uncertainties related to the range of control region

When change range of control region from (105,160) to (105,500)

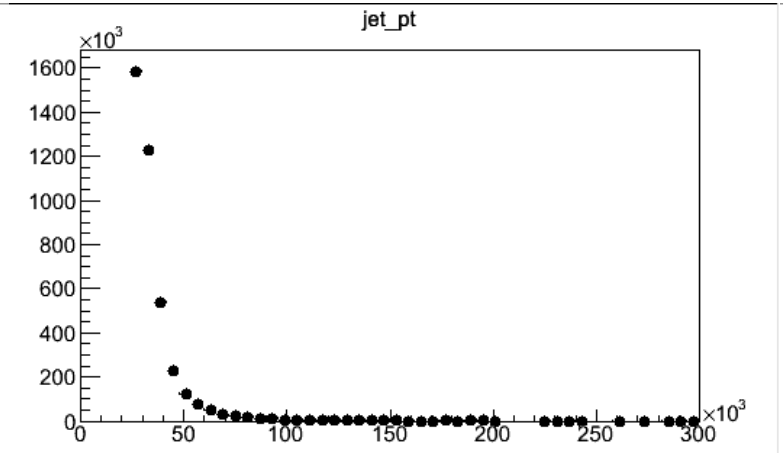
The fit will turn out to give 1.9 continuous backgrounds

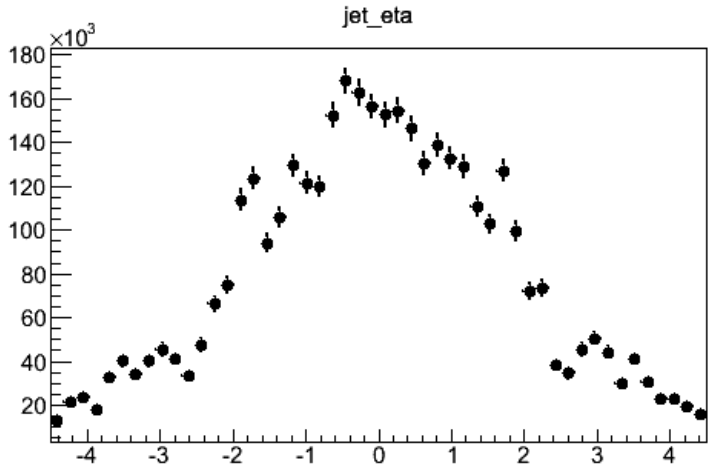
This will give 12 effect on our upper limit

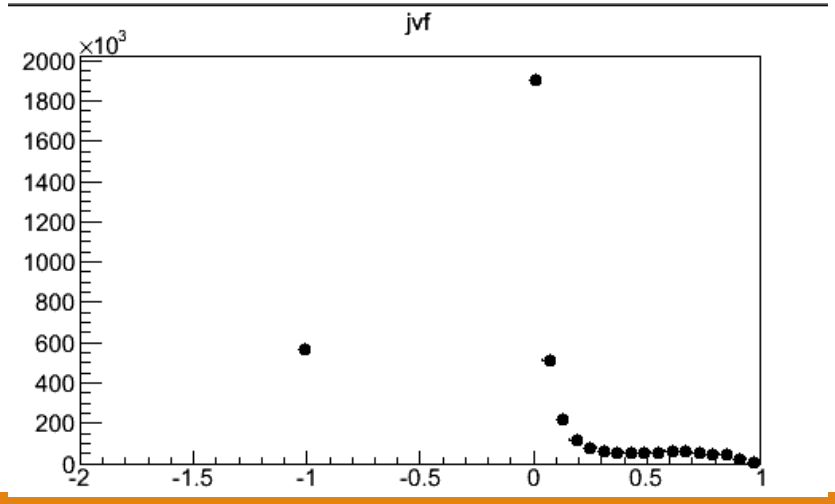




Pile-up study on VBF prospect study







Pile-up study on vbf prospect study

At the moment we do not have jet mass

I don’t think it’s a problem if we consider most pile-up jets are light jet if we use them to reconstruct Mjj

Since the mass of jets are much more less than 1 GeV while or jets_pt are over 25GeV

if $E \approx P >> m$

Then $M_{12}^2 = m_1^2 + m_2^2 + 2p_1p_2(1-\cos\Delta\theta)$