

Report for the first week

Kolchanova Alena

CMS group

- In this analysis I used the measure of hadronic activity H_T , which is defined:

$$H_T = \sum_{jets} p_T$$

There are five main SM background processes to this SUSY search: $t\bar{t}$, W Boson+Jets, DY +Jets, single top +jets and QCD

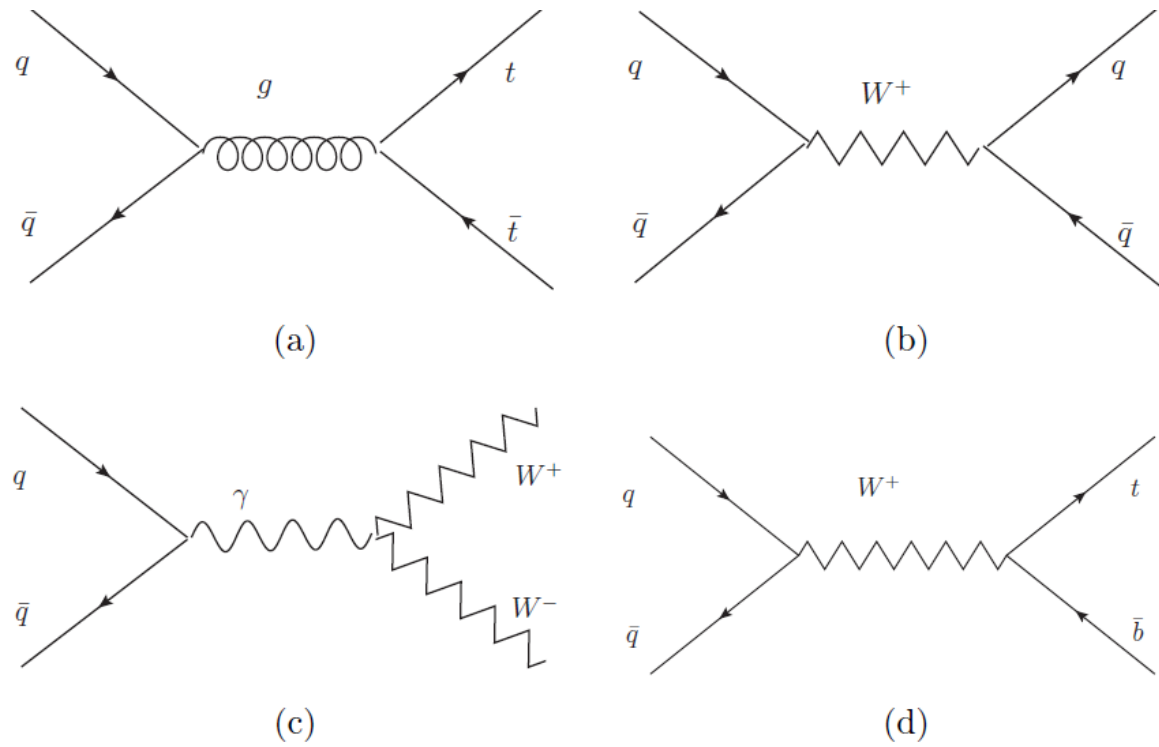


Figure 4: Feynman diagrams for background events: (a) - $t\bar{t}$, (b) - Boson + jets, (c) - DiBoson, (d) - single top+ jets

Preselection

Kinematics cuts

$$p_{T>} > 8 \text{ Gev}$$

$$\eta < 2.4 \text{ Gev}$$

$$dx < 0.045$$

$$dz < 0.2$$

$$\text{The relative isolation } I_{rel} < 0.1$$

Topological cuts

$$dr > 0.5$$

Processes

Luminosity=5000 pb⁻¹

TTJets.root

WJets.root

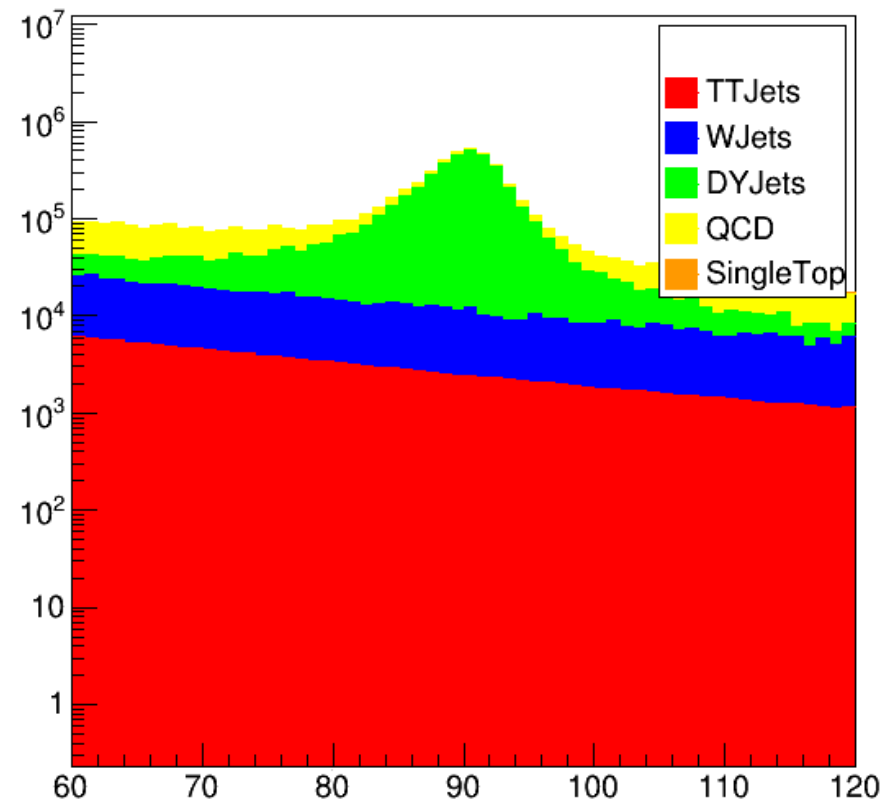
DYJetsToLL_M-50.root

QCD_Pt-20toInf_MuEnrichedPt15.root

ST_tW_antitop.root

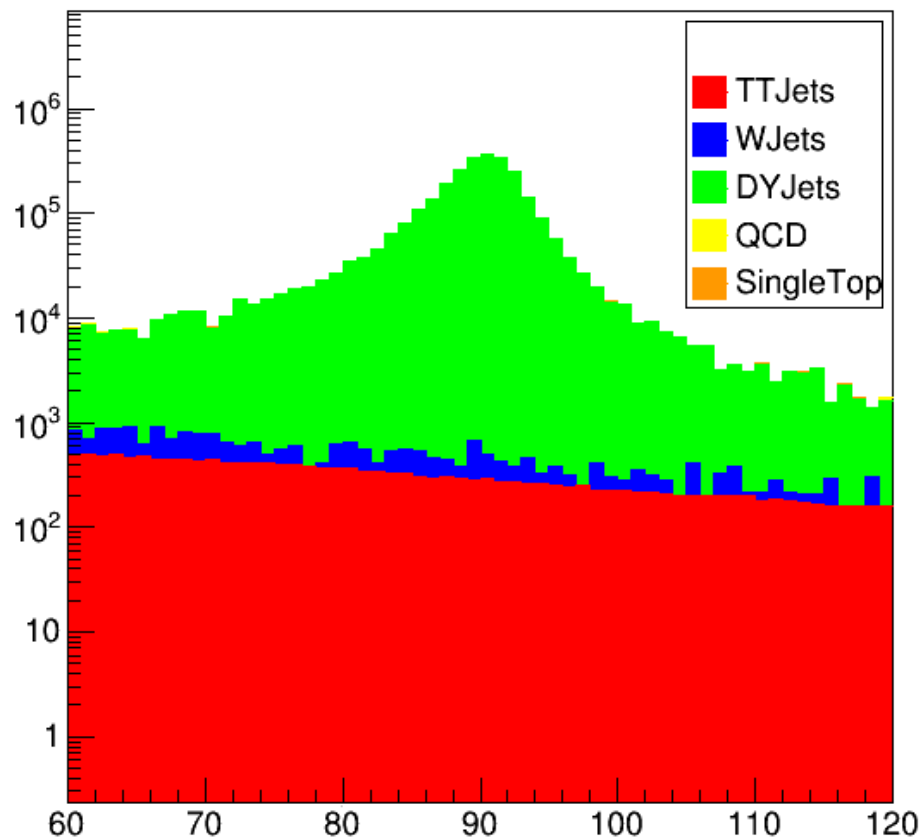
ST_tW_top.root

ZMassAllElectronsH



Before cuts

ZMassIdTightElectronsDRCutH



After cuts

At First, I found all sample and created list of TTJets, Wjets, DYJets, QCD, Single Top file.
Then I made run AnalysisMacro_dielectrons on all processes.

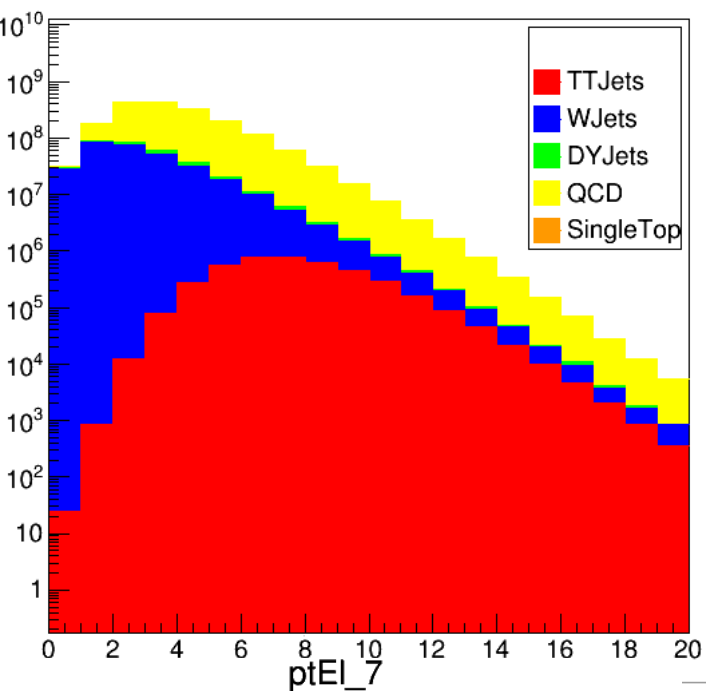
THStack

I made the THStack for all histograms TH1D from AnalysisMacro and all processes. Then I printed out the number of events that “pass” each cut

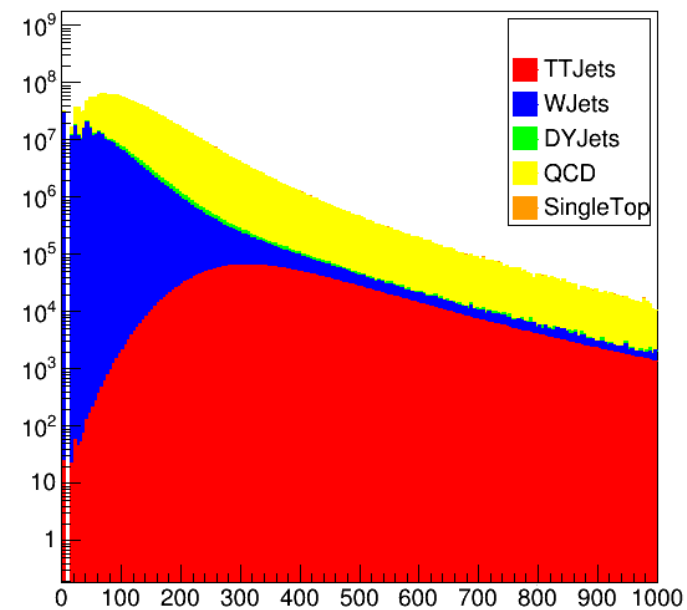
I created the array of histograms as many, as my cuts. Count the passed events after each cut

At the end, I got plots after all cuts:

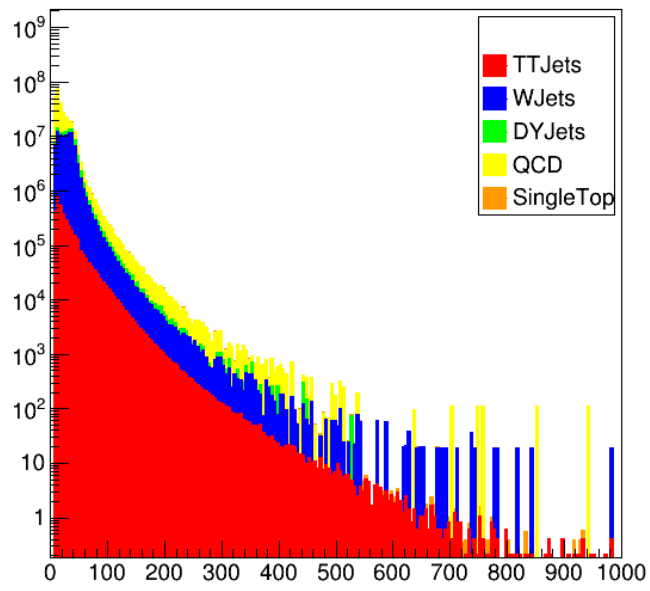
NJets_7



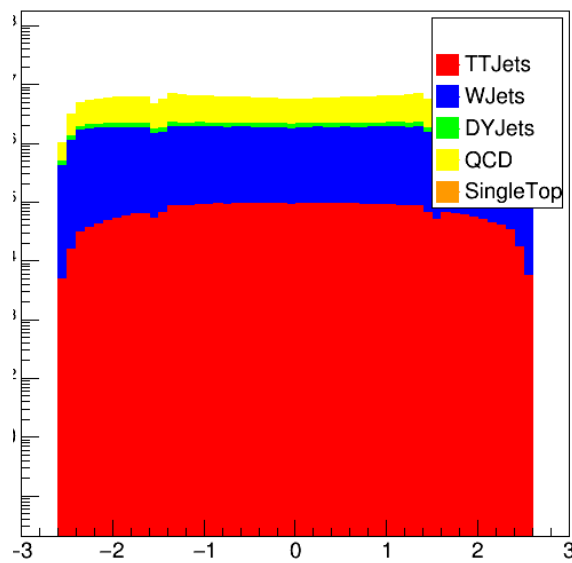
hHt_7



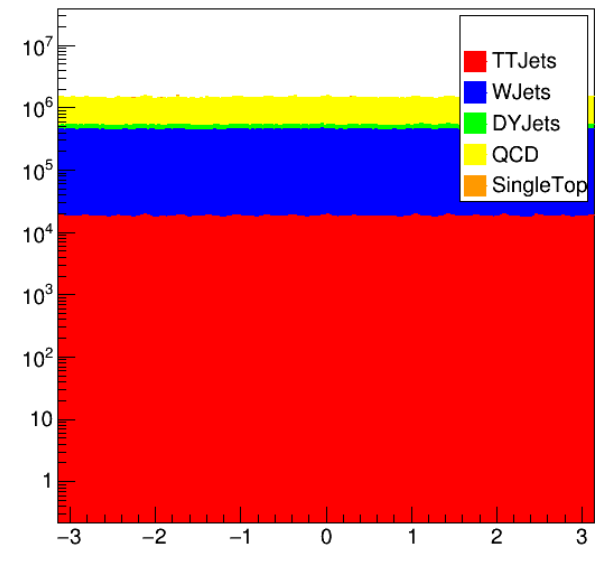
ptEl_7



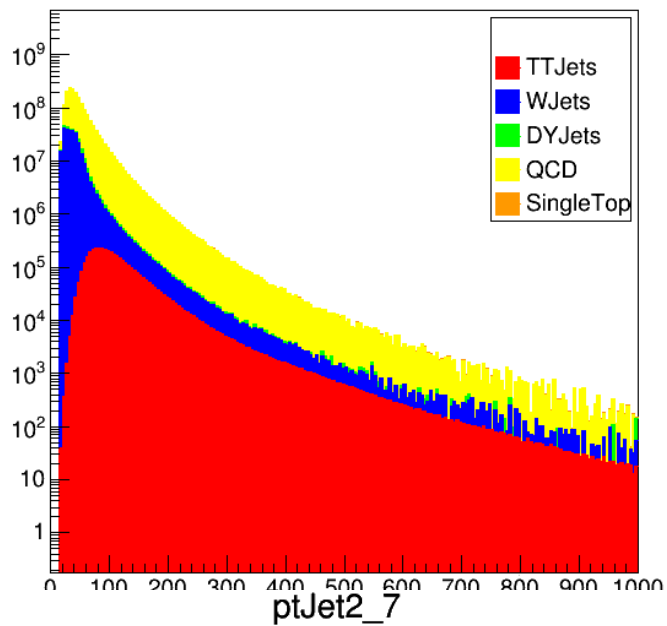
etaEl_7



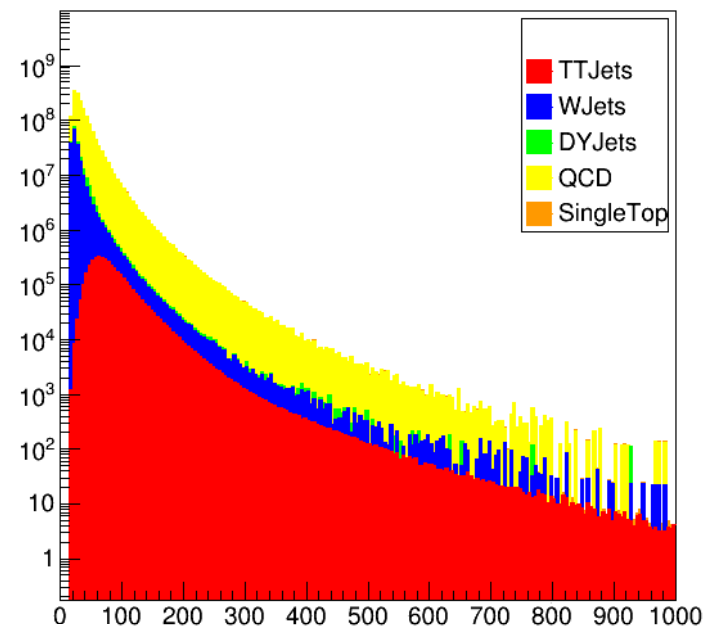
phiEl_7



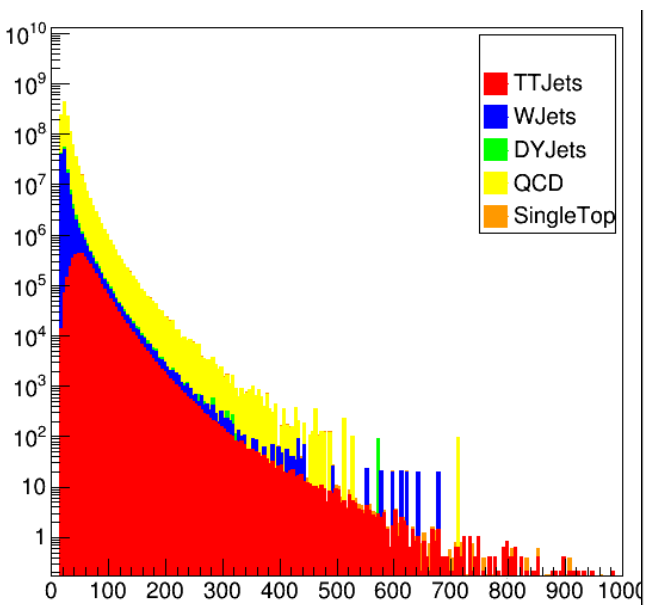
ptJet0_7



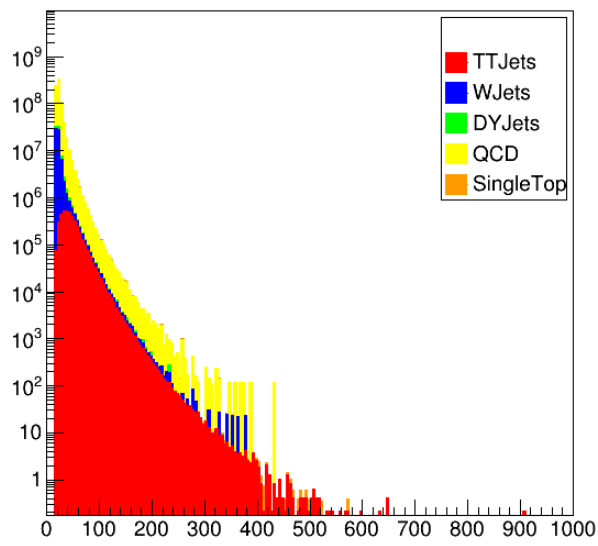
ptJet1_7



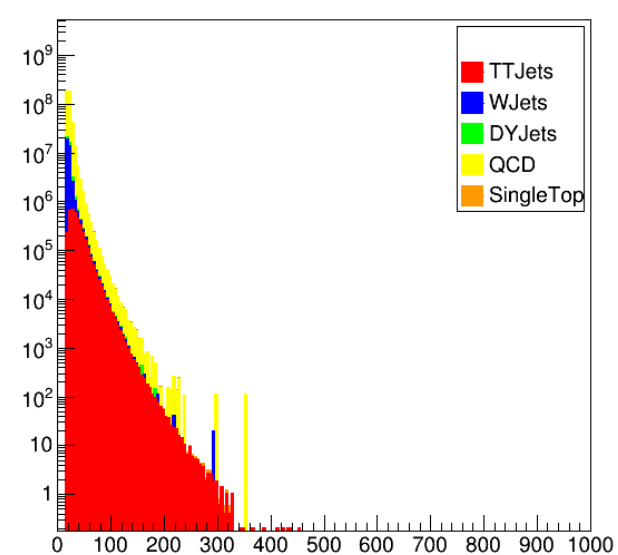
ptJet2_7



ptJet3_7



ptJet4_7



Thank you
for your attention