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Control Plots and Trigger Efficiencies

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Overview

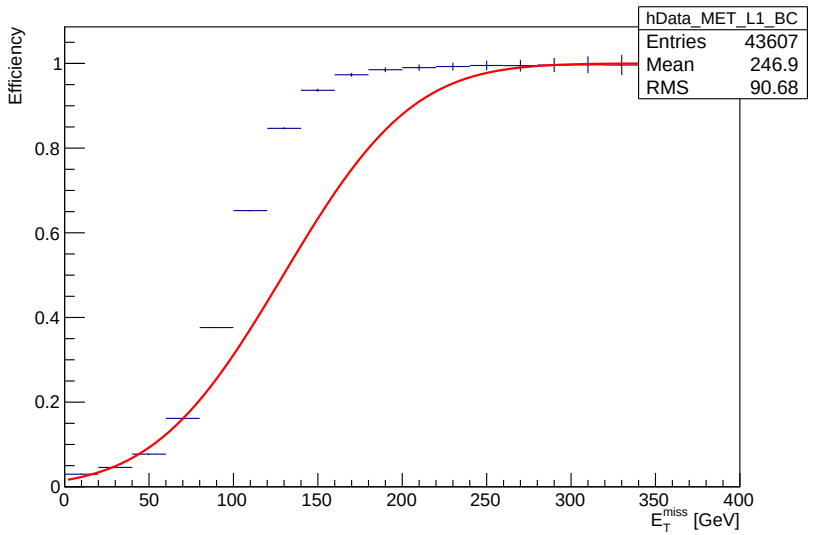
- Fitted trigger efficiencies
- Look at some variants of the control plots

Trig Eff fit

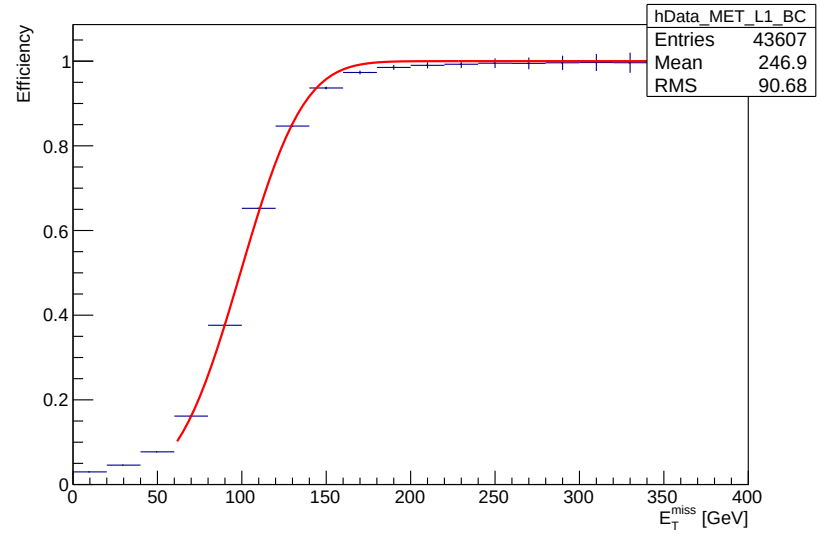
- Had problems with jumps in control plots
  - Jumps occured at trigger efficiency bin boundaries
  - Have fit error function to trigger turn on curves to try to solve problem

L1 MET turn on

L1 MET - full range

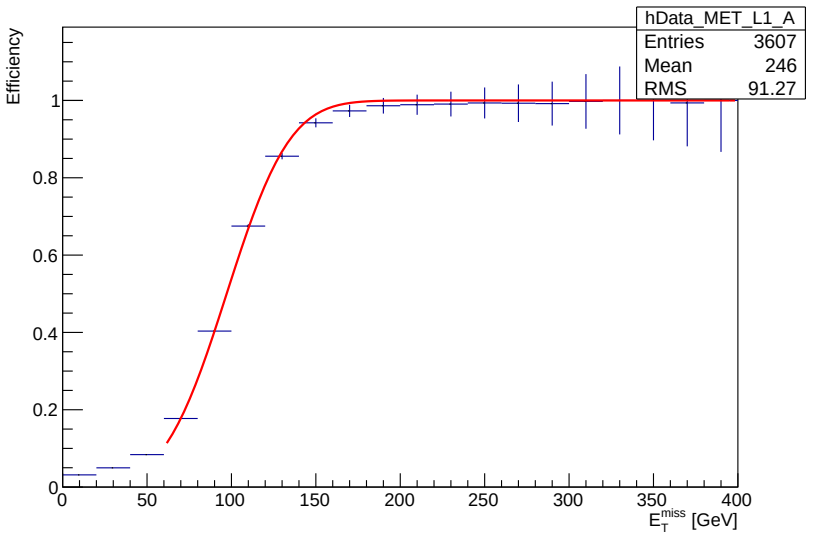


L1 MET - above 60

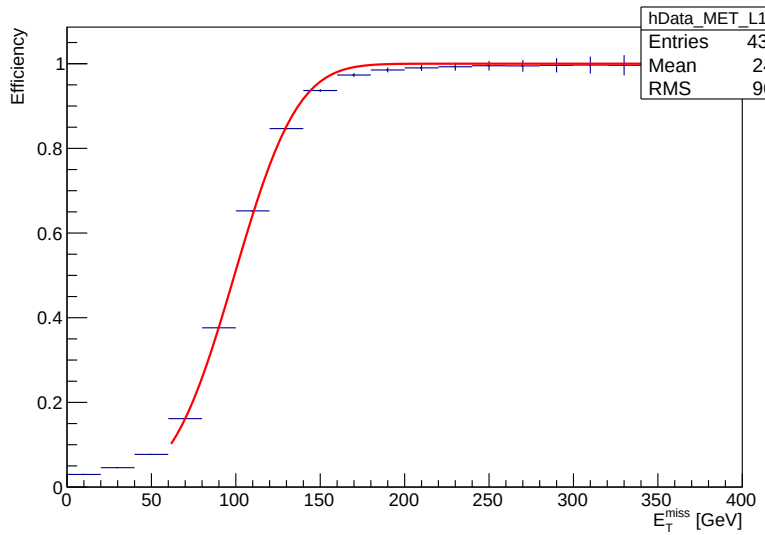


L1 MET turn on

L1 MET - A

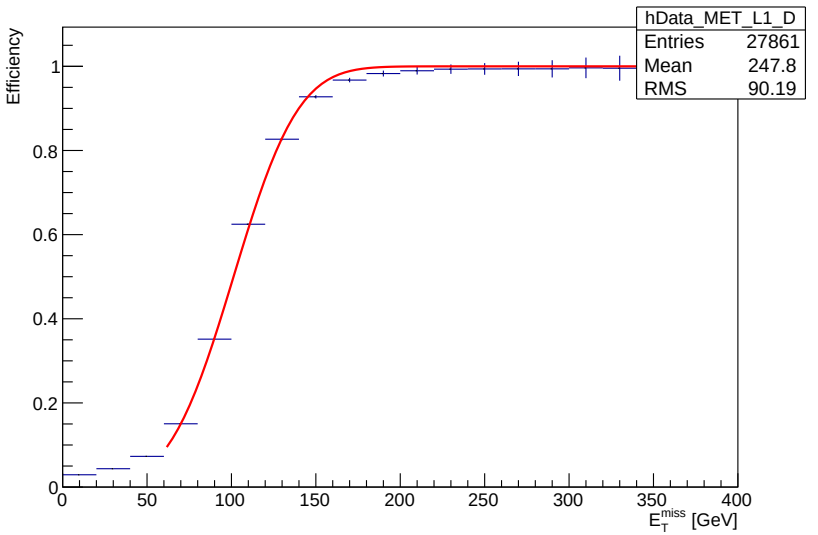


L1 MET - BC



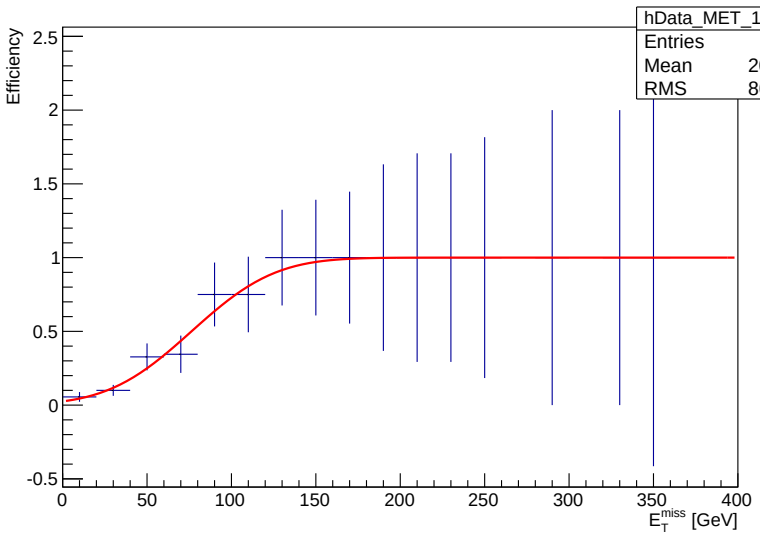
L1 MET turn on

L1 MET - D

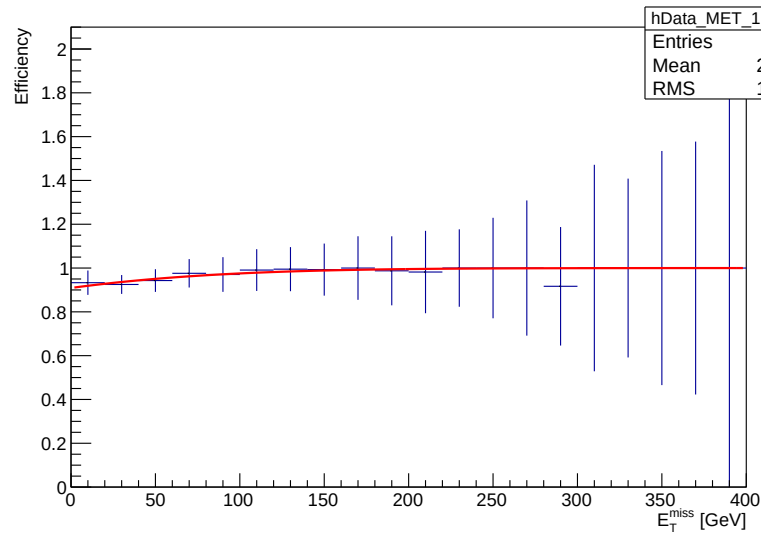


HLT MET turn on

HLT MET - A

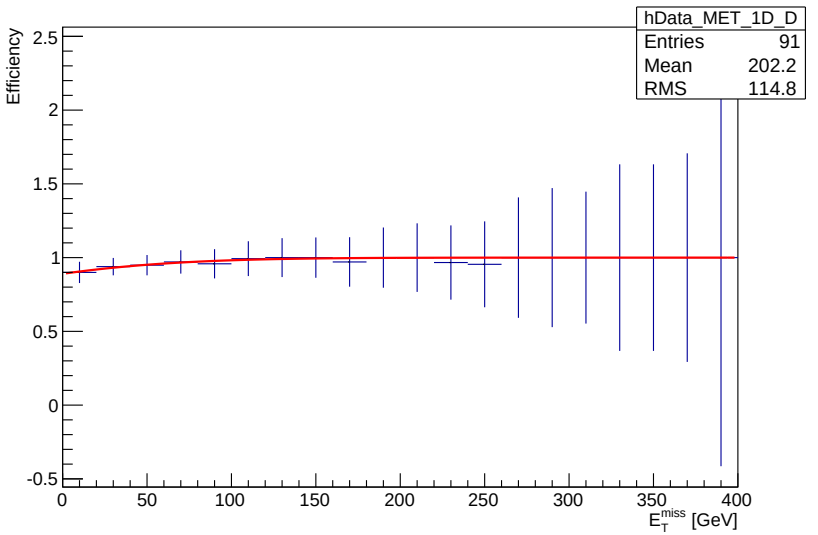


HLT MET - BC



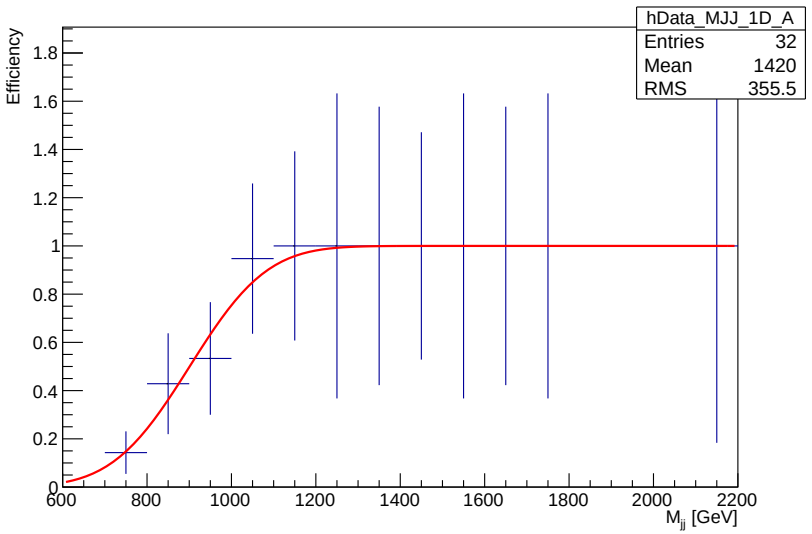
HLT MET turn on

HLT MET - D

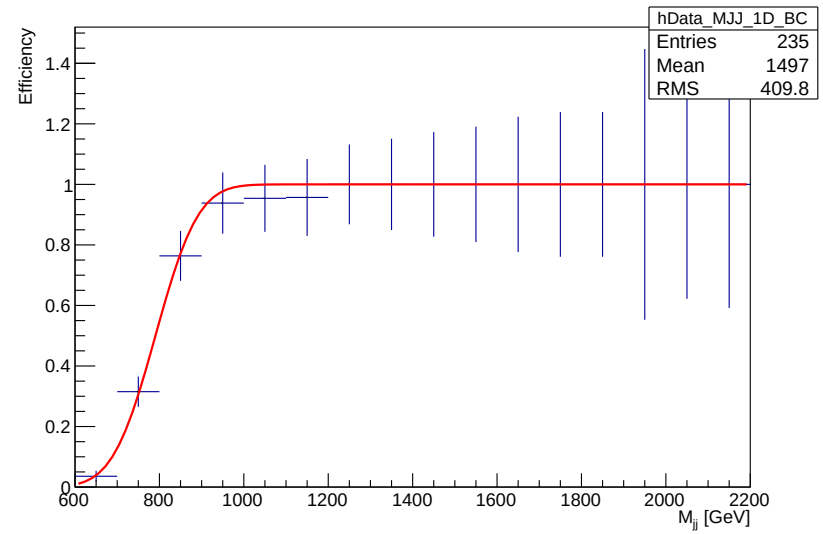


HLT MJJ turn on

HLT MJJ - A

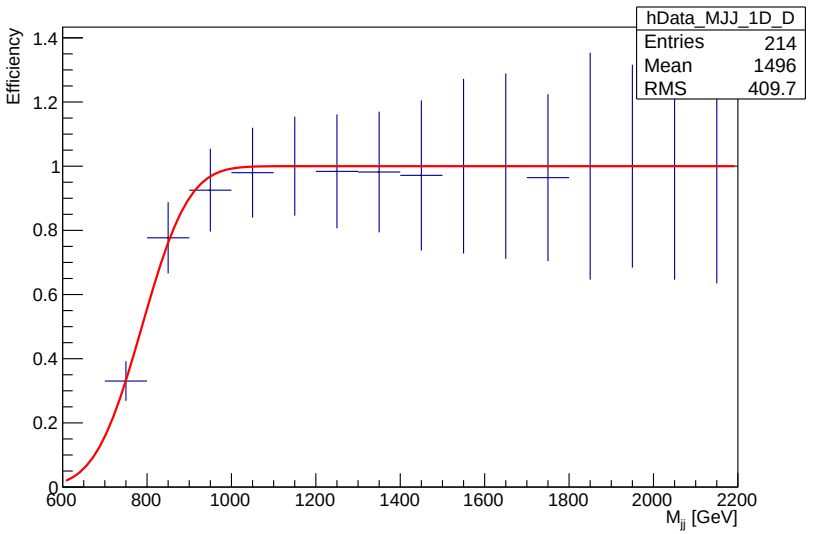


HLT MJJ - BC



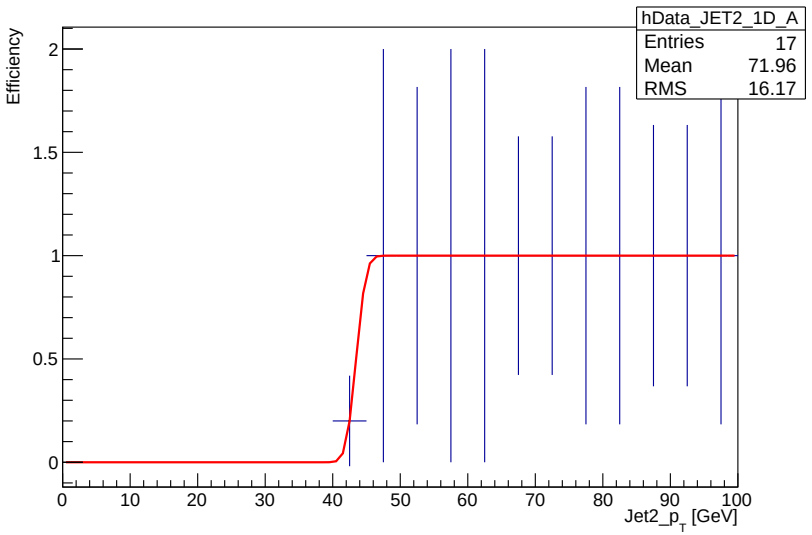
HLT MJJ turn on

HLT MJJ - D

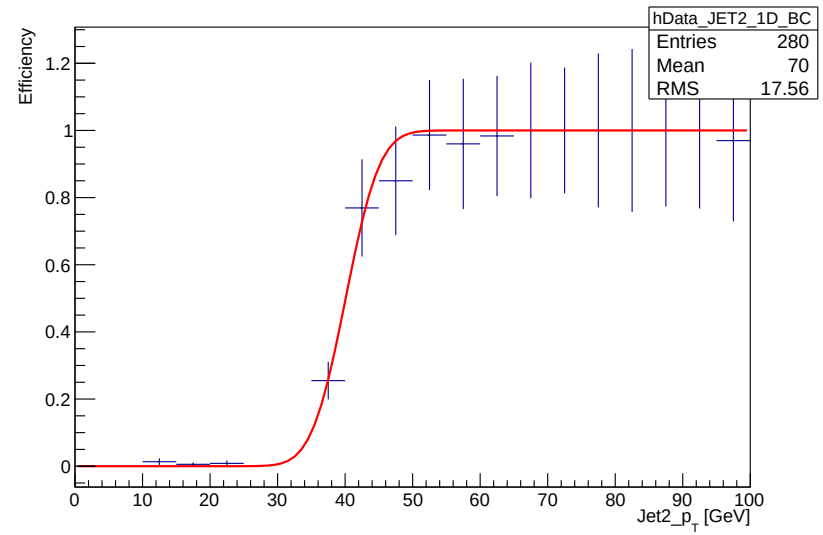


HLT JET2 turn on

HLT JET2 - A

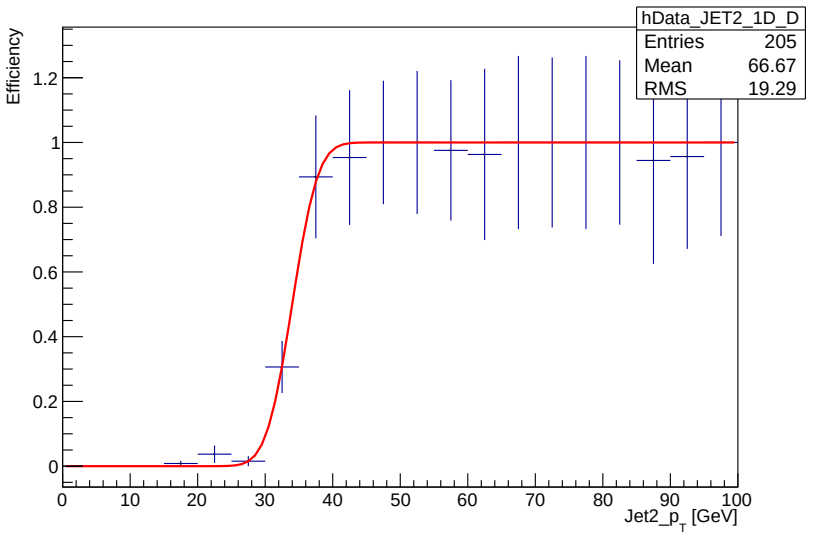


HLT JET2 - BC



HLT JET2 turn on

HLT JET2 - D

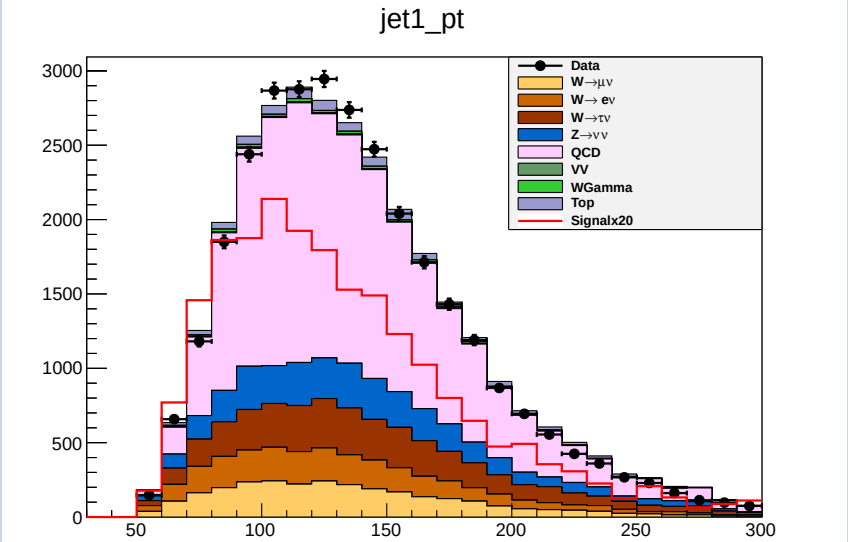


New Control Plots

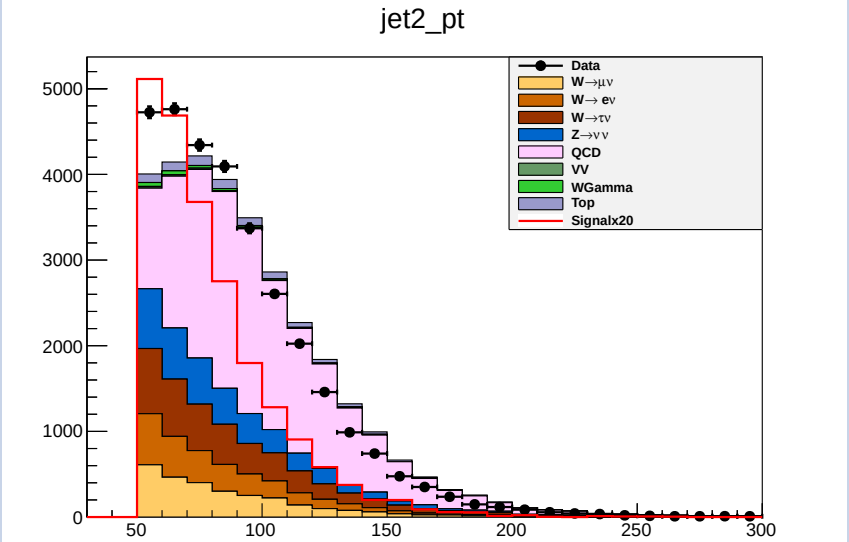
- Add met$>$ 60 cut because of trigger turn on fit
- Other cuts are: $jet1_pt > 50, jet2_pt > 50, dijet_deta > 3.6, metnomu_significance > 3, jetmetnomu_mindphi > 1.5$
- Later plots also have: $!(metnomuons < 130 \&\& dijet_M < 1100)$

New control plots

Jet 1 pt

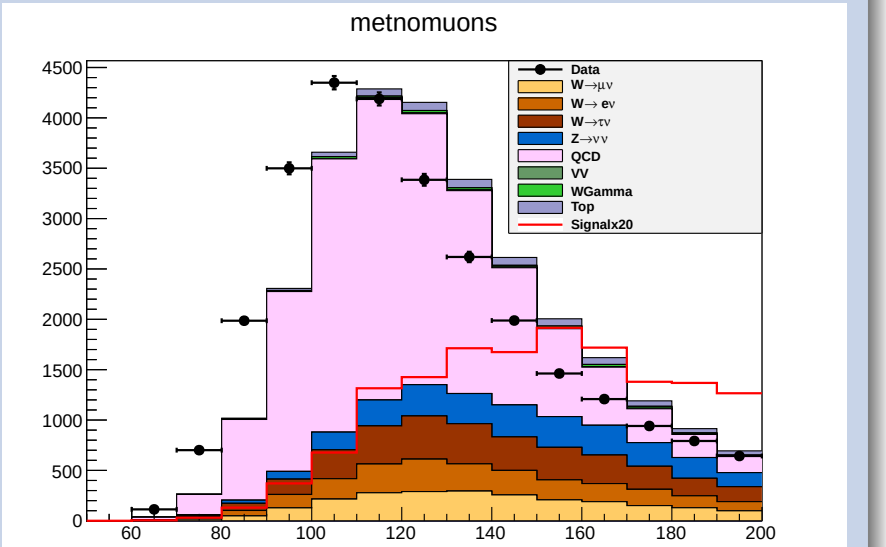


Jet 2 pt

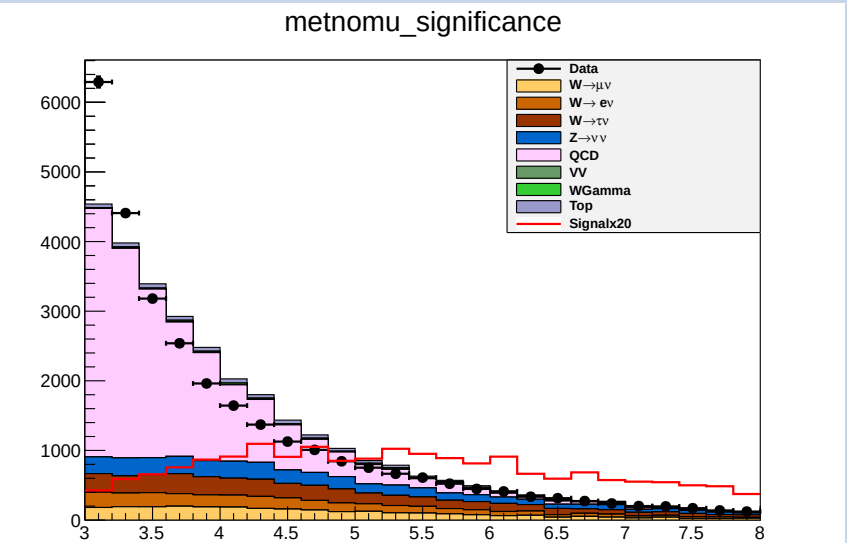


New control plots

METnomu

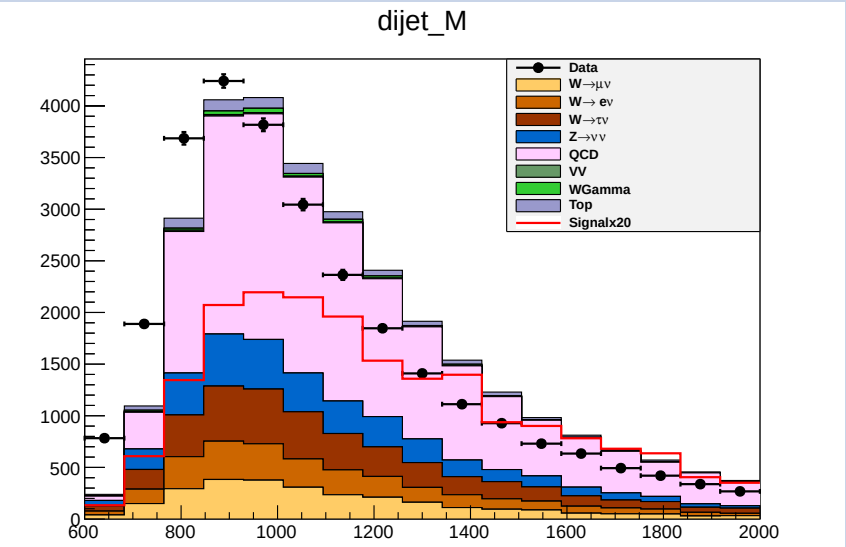


METnomusig



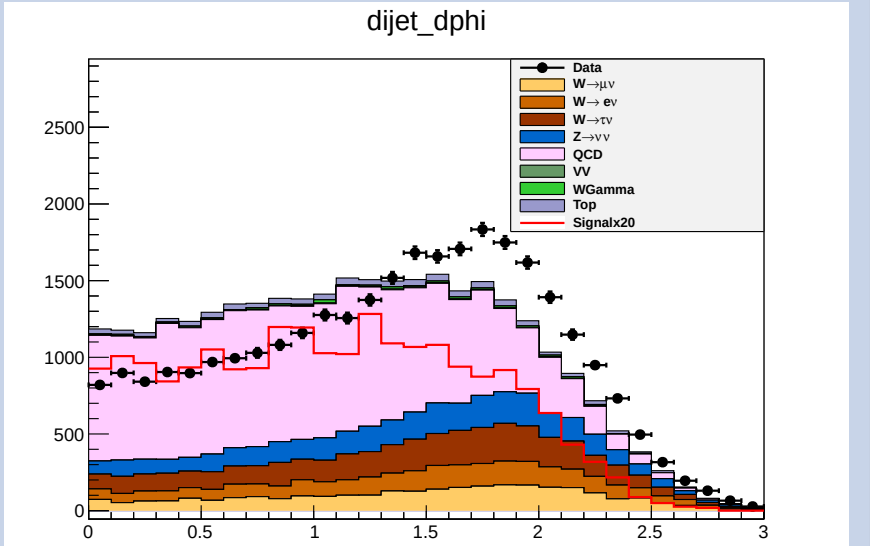
New control plots

Mjj

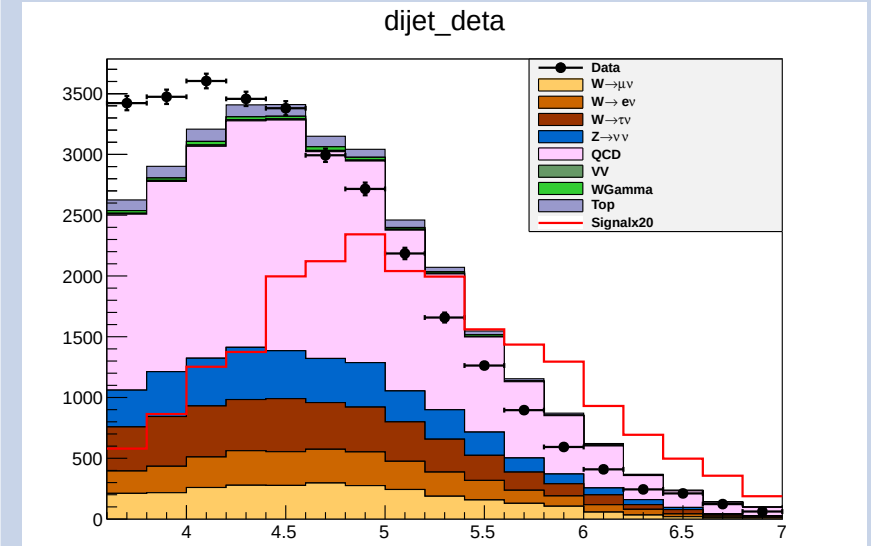


New control plots

Dphijj

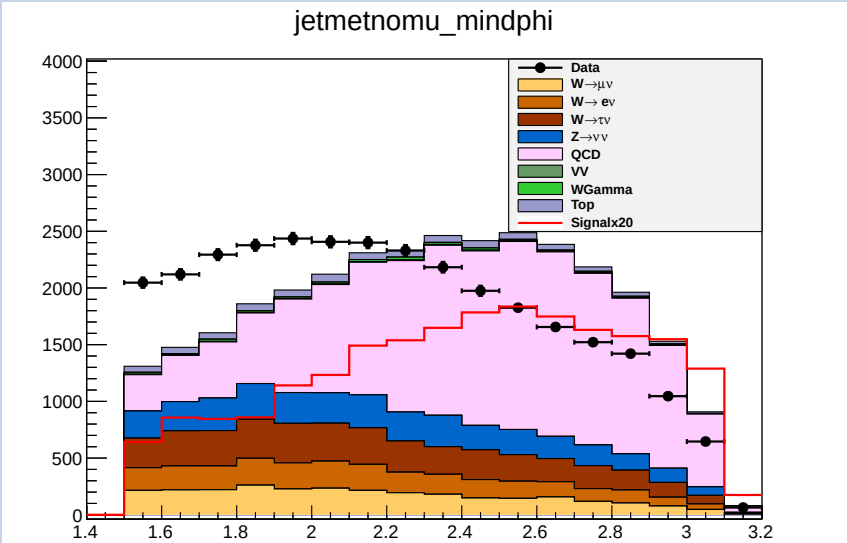


Detajj

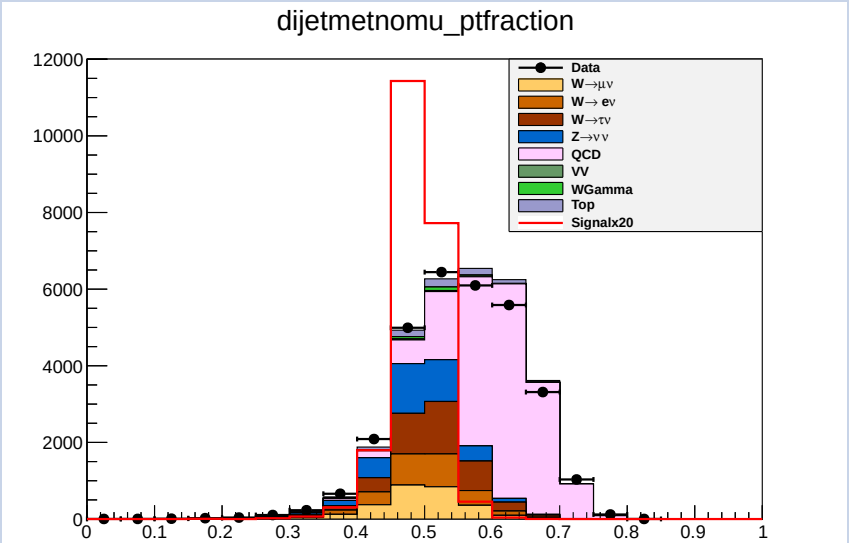


New control plots

Jet-met mindphi

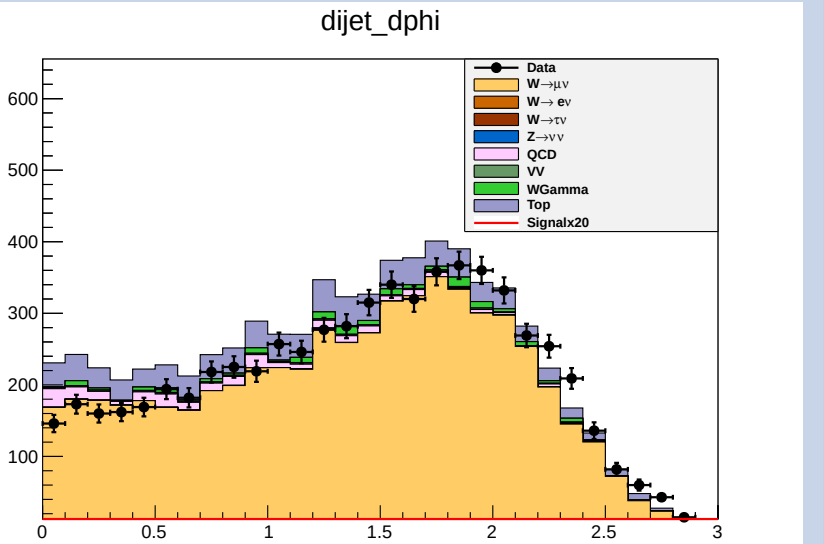


dijet-metnomu pt fraction

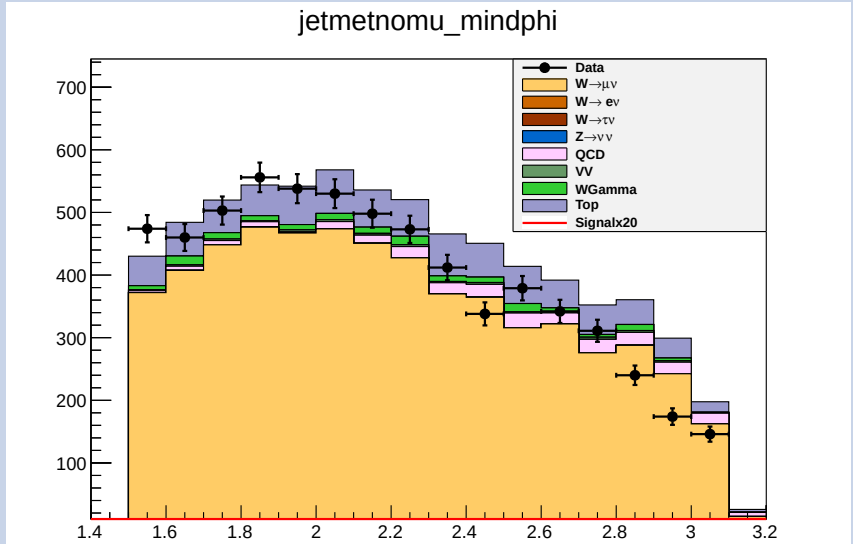


Control regions - Wmu

Dphijj

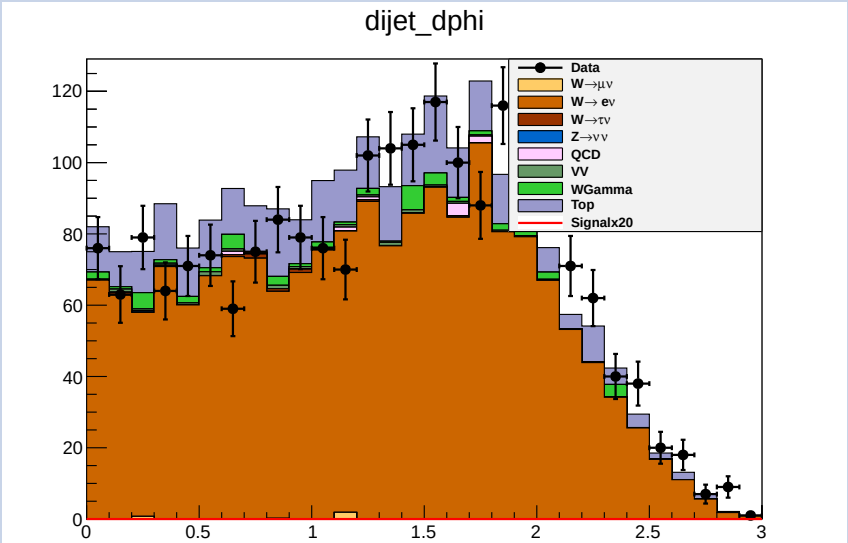


Jet-MET mindphi

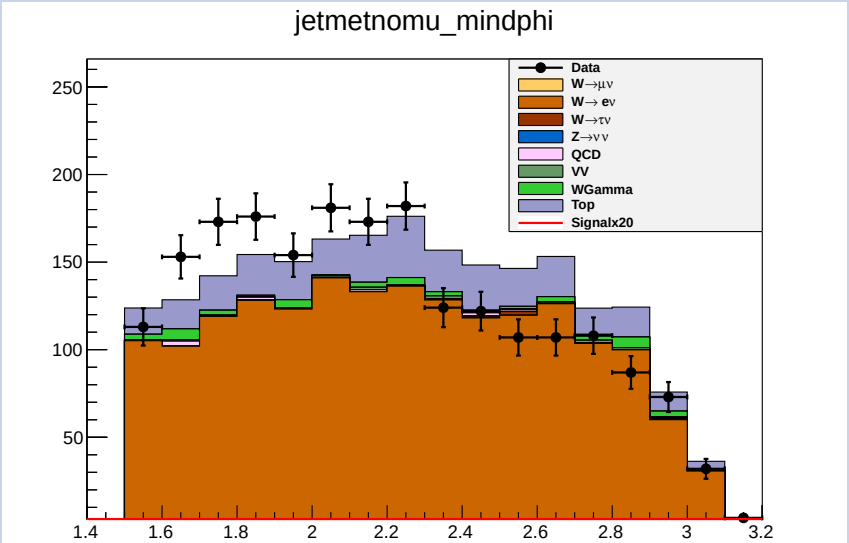


Control regions - Wel

Dphijj

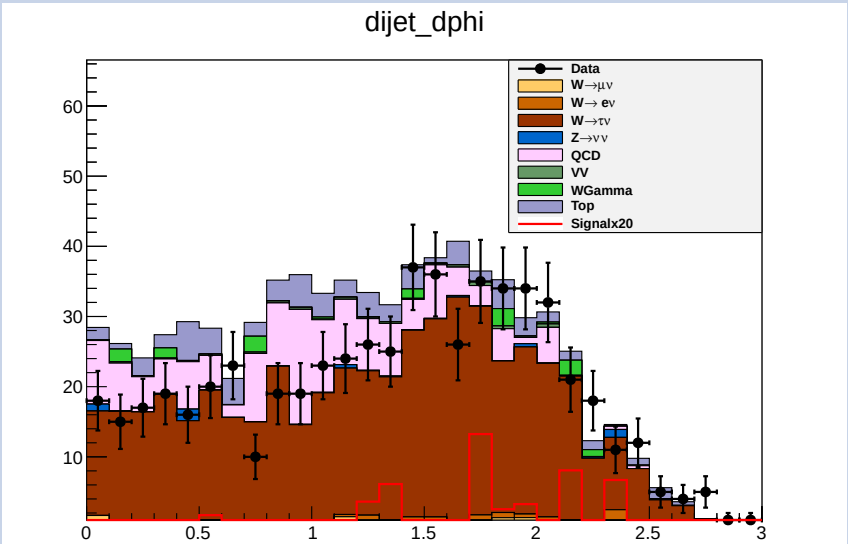


Jet-MET mindphi

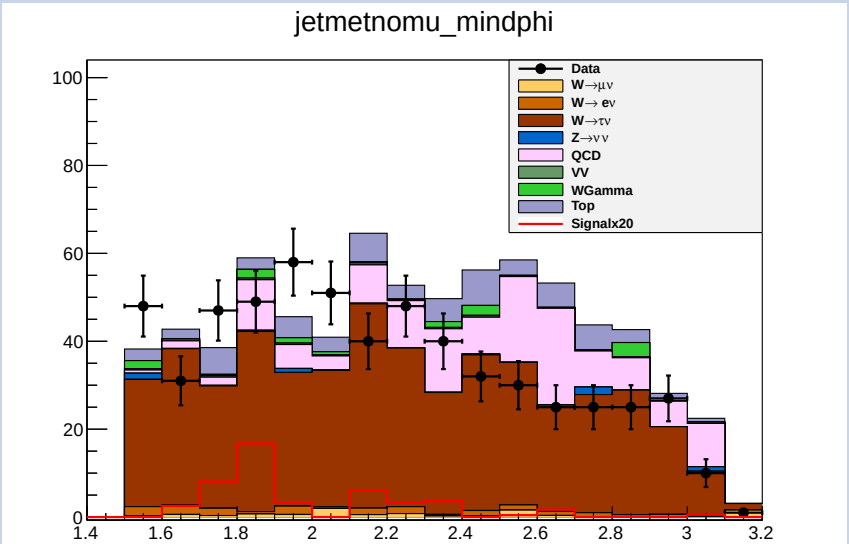


Control regions - Wtau

Dphijj

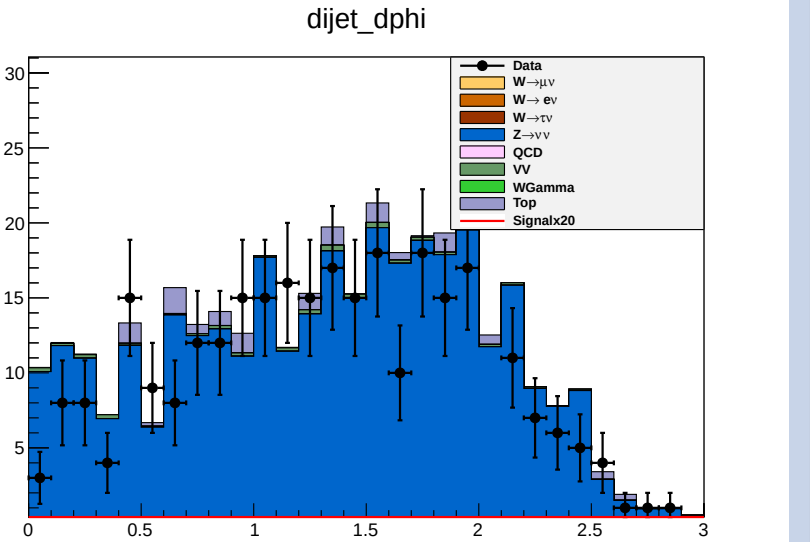


Jet-MET mindphi

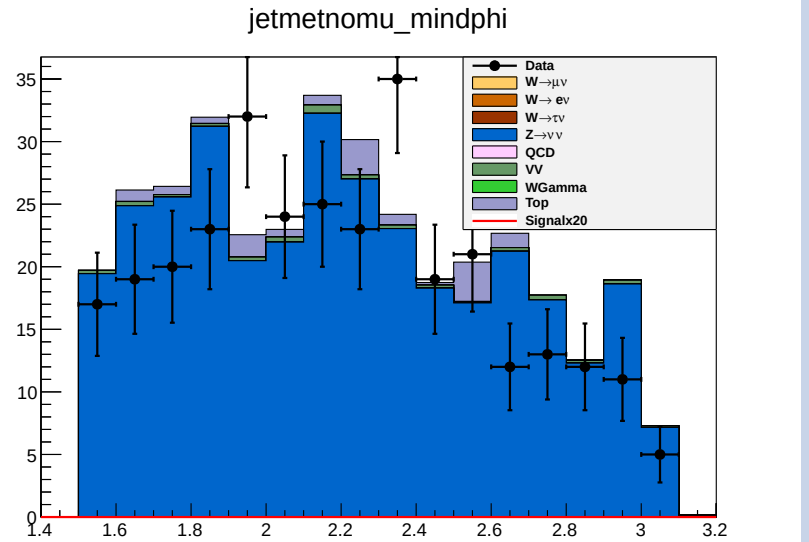


Control regions - Zmumu

Dphijj

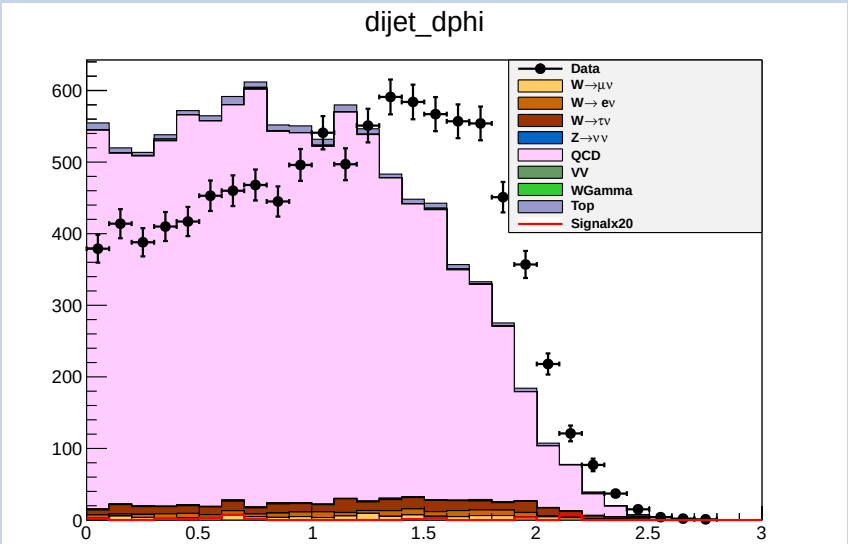


Jet-MET mindphi

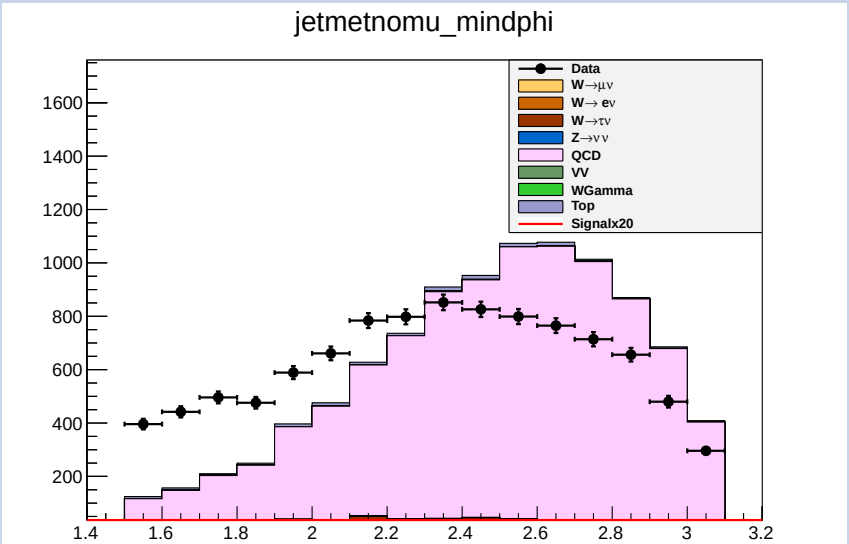


Control regions - QCD

Dphijj

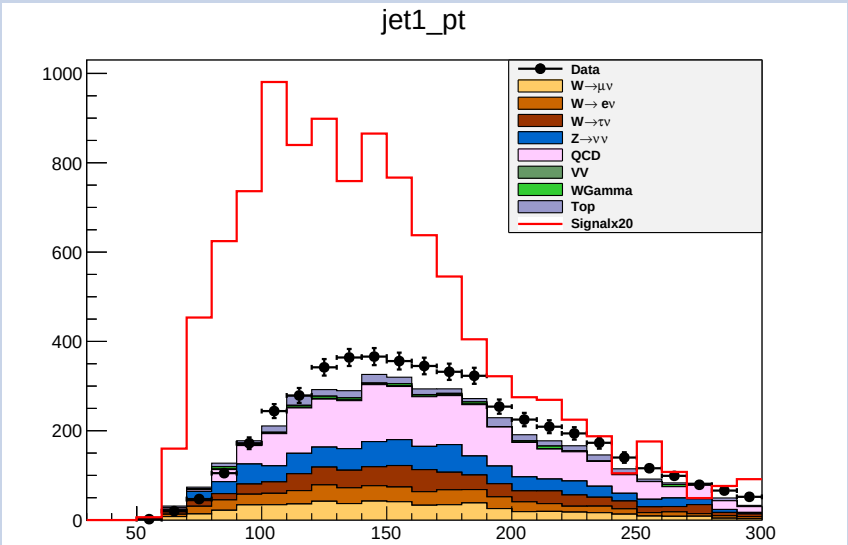


Jet-MET mindphi

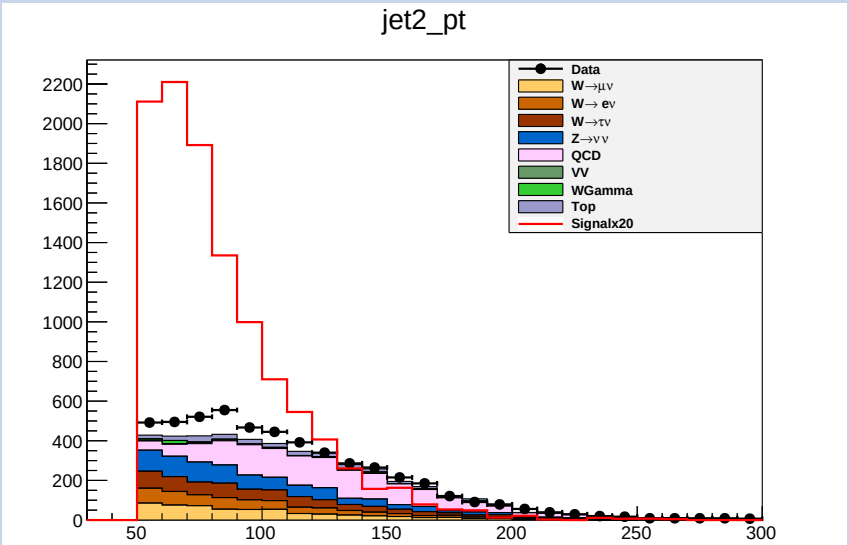


New control plots - tight region

Jet 1 pt

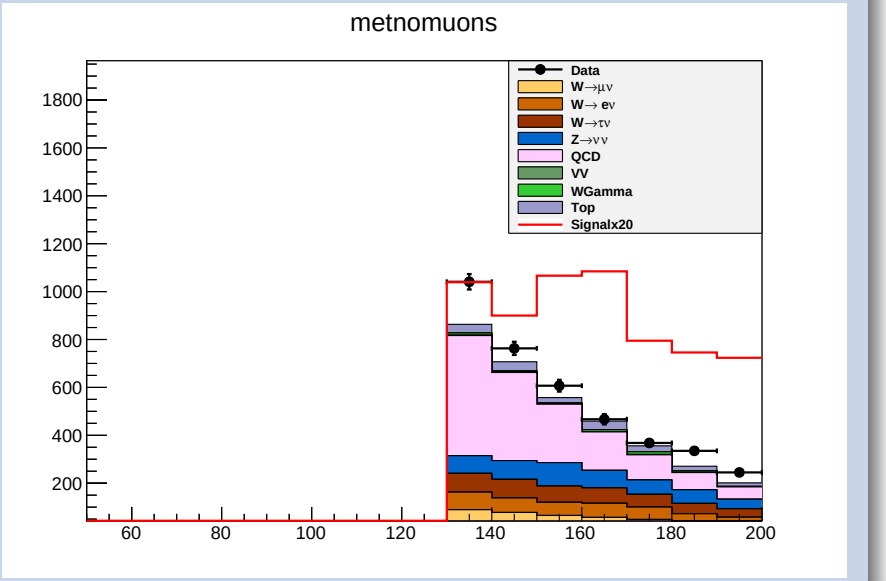


Jet 2 pt

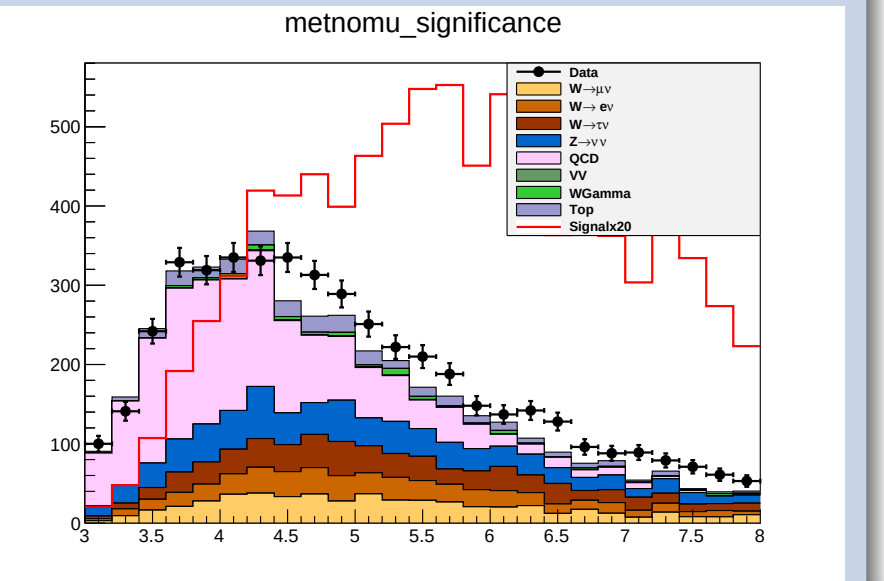


New control plots - tight region

METnomu

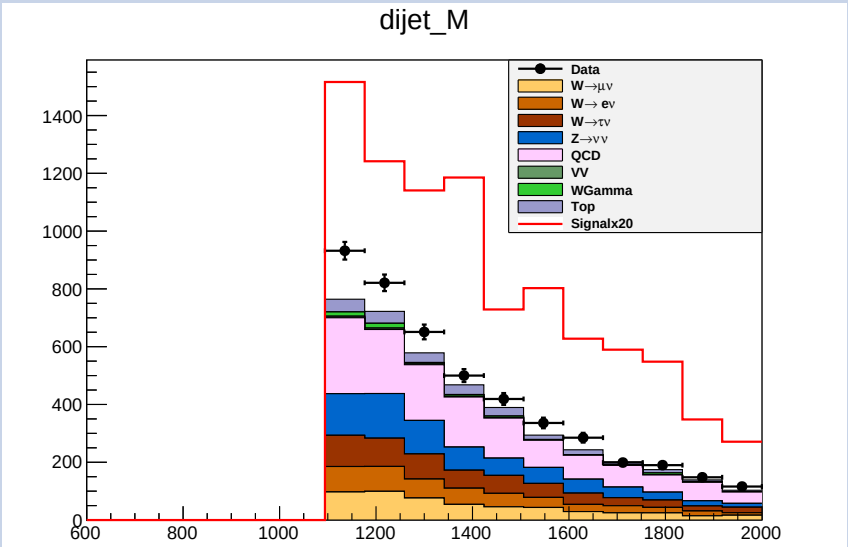


METnomusig



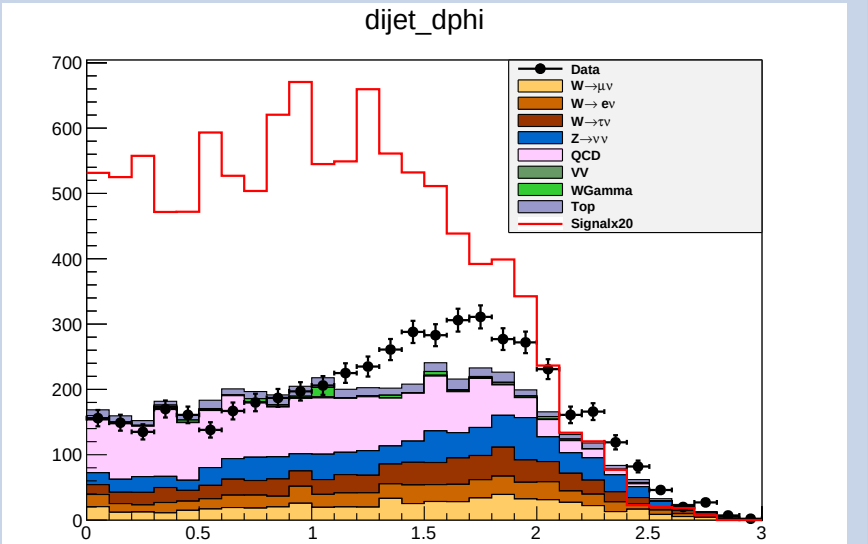
New control plots - tight region

Mjj

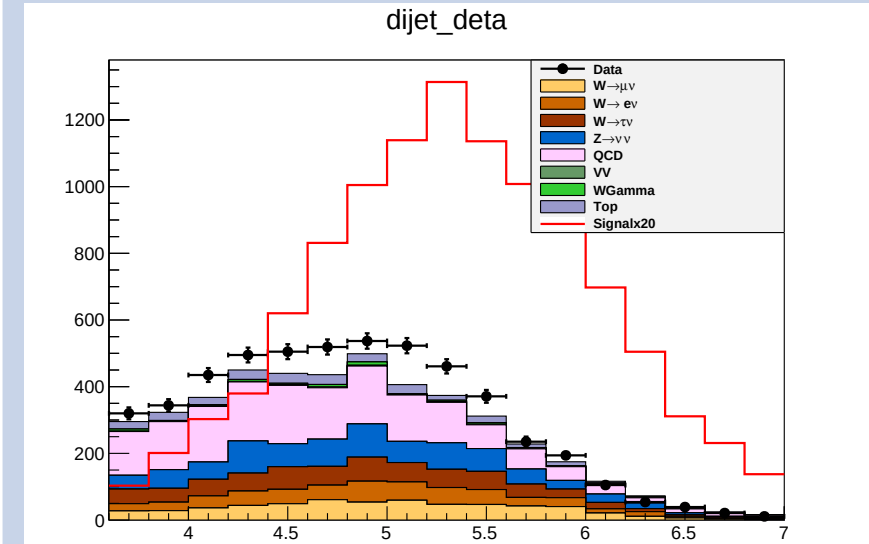


New control plots - tight region

Dphijj

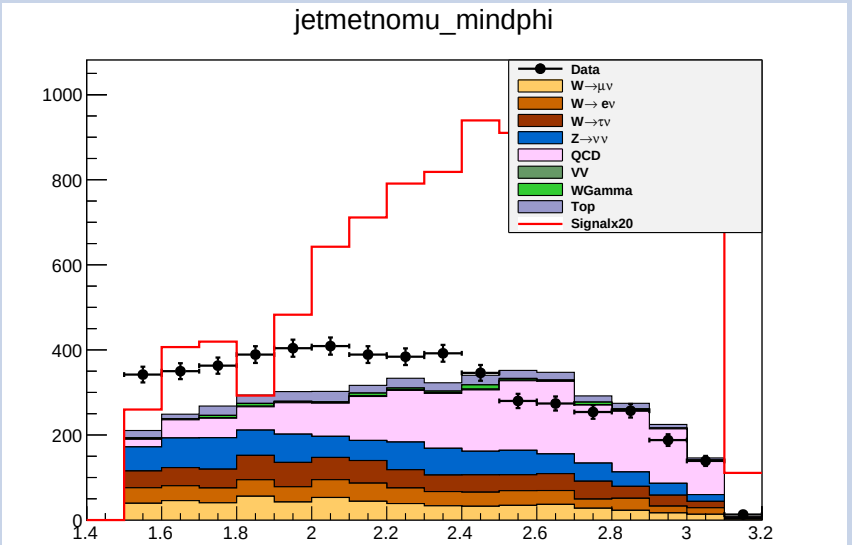


Detajj

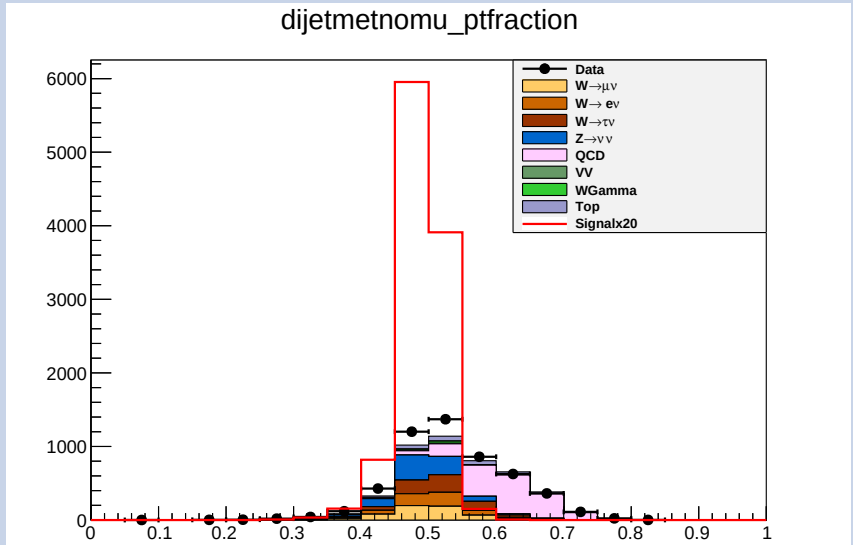


New control plots - tight region

Jet-met mindphi



dijet-metnomu pt fraction



Conclusions

- Data MC disagreement still present
  - Jumps gone due to fitting
  - Problem with QCD angular distributions
  - Moving to tight region doesn't remove problem
  - Have plots only cutting out regions where more than one variable is inefficient, need to study

Backup