MET and W Selection

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UW Madison HEP Group meeting
03/02/09

Outline of The Talk

- MET plots of “Tight “ Electrons
- Reconstructed W properties
- Some Numbers !
- Conclusions

"Tight" electron Cuts

- Region is CEM
- Is fiducial.
- $E_T > 20$ GeV
- Track $Z_o \leq 60$ cm
- Track $p_T \geq 10$ GeV
- COT Axial Segments(with Min 5 hi ts)≥ 3
- COT Stereo Segments(with Min 5 hi ts)≥ 2
- Had/Em ≤ (0.055 + (0.00045*E))
- Fractional Isolation ≤ 0.1
- LshrTrk ≤ 0.2 (Lateral share -3 Tower)
- E/P ≤ 2.0 unless $p_T \geq 50$ GeV
- CES $\Delta Z \leq 3.0$ cm
- Signed CES ΔX --- $-3.0 \leq q^* \Delta X \leq 1.5$
- CES Strip Chi2 ≤ 10

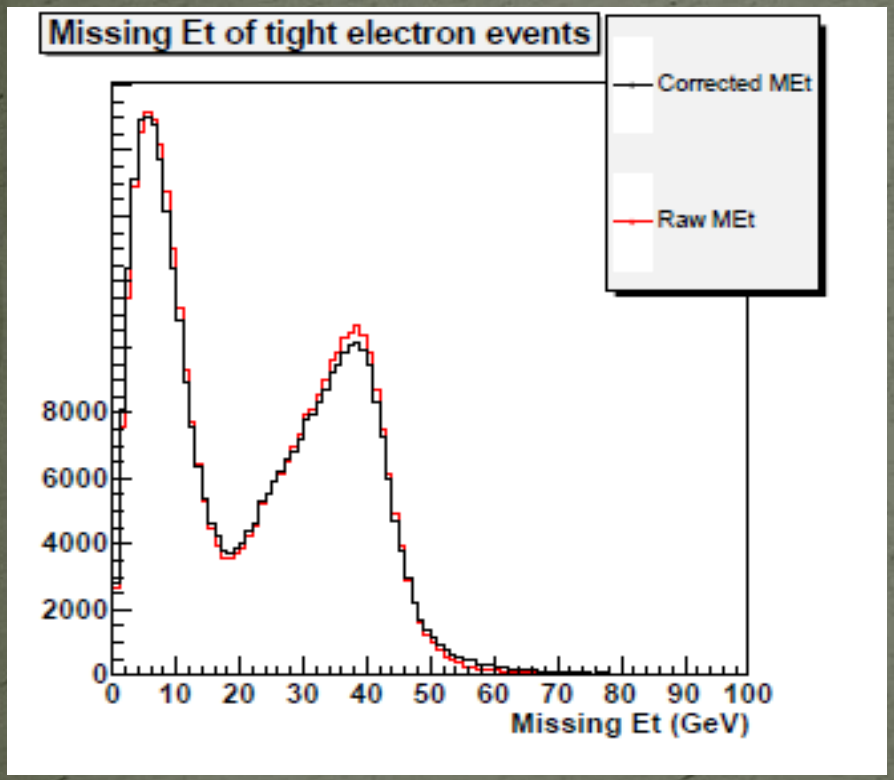
Types of Missing E_T variables in Ntuple (source: Ray Culbertson)

- Met[0]
  - Vector Sum of Tower energies
  - No Requirements made on Towers being in jets/lepton
  - Vertex at (0,0,0)
- Met[2]
  - Same as Met[0] but corrected for Tracks in Cracks
  - Quote "Experimental Quantity from Pasha"
- Met[3]
  - Same as Met[0] but Z of Vertex is highest Sum P_T Zvertex
- Met[4]
  - Same as Met[3] ,X and Y are set to Beam line

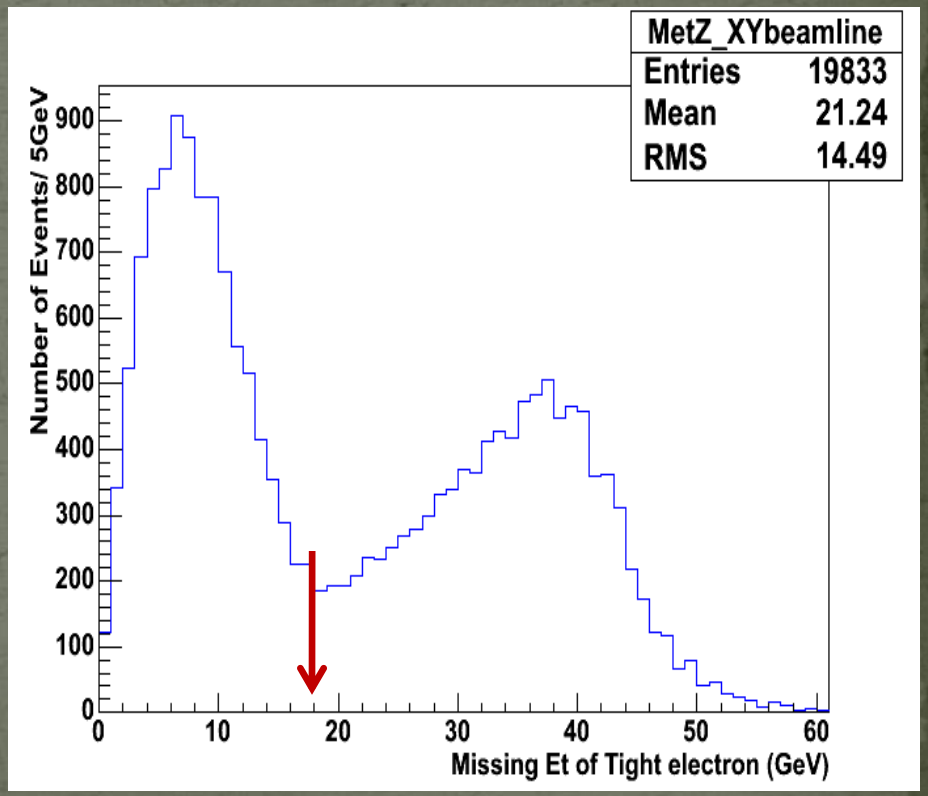
Chosen one

MET of "Tight" Electron

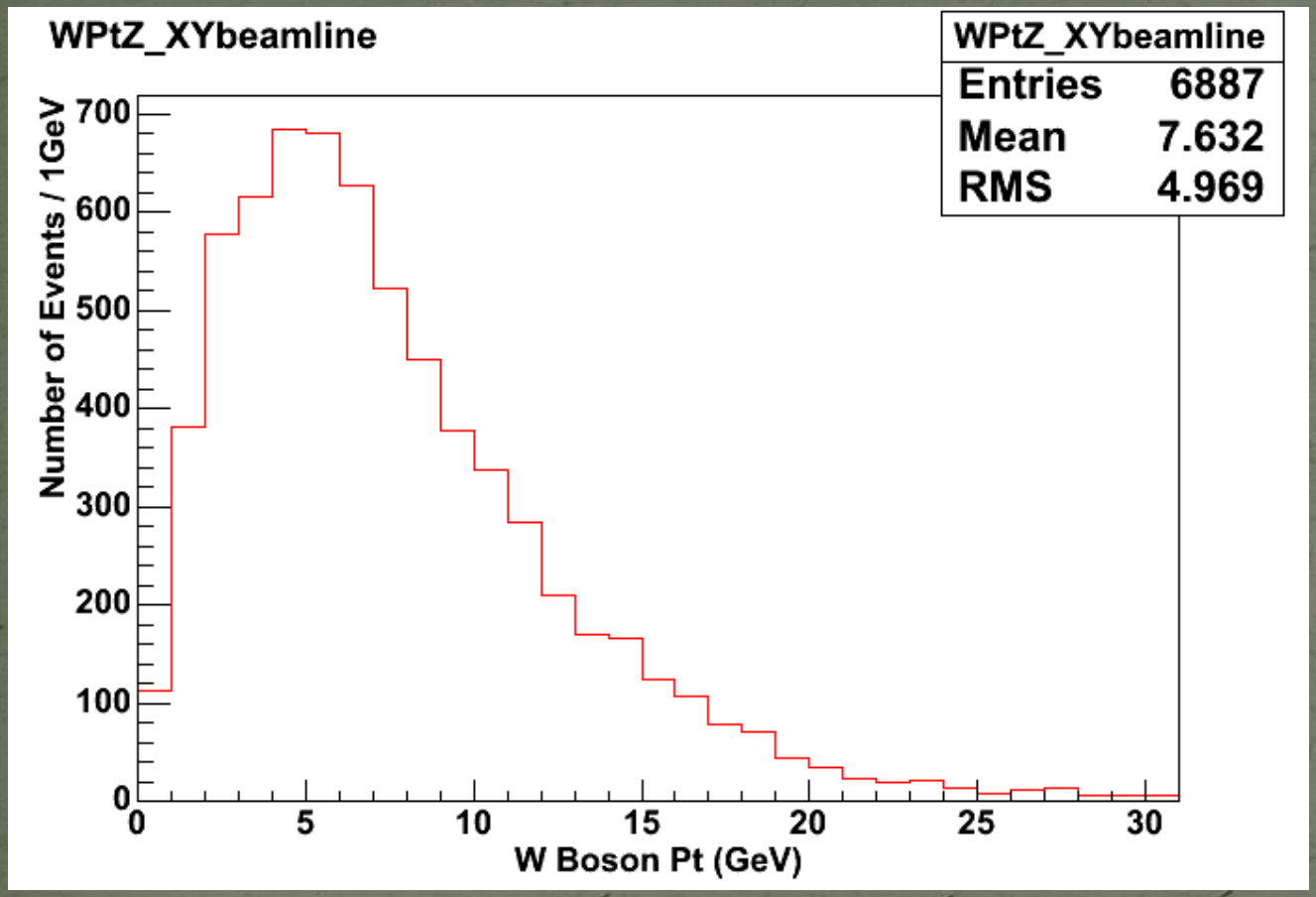
Previous W+jet Analysis



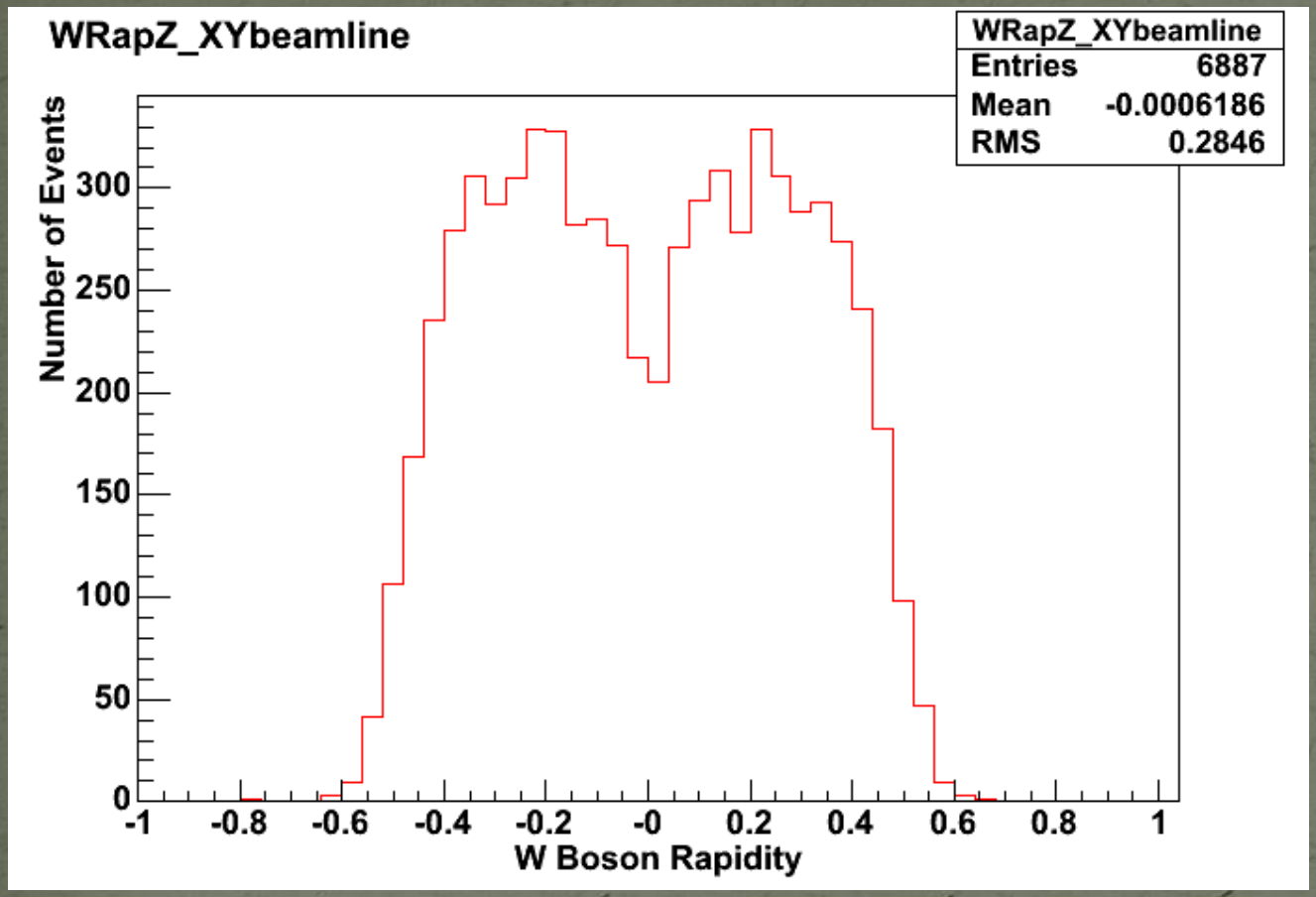
My W+ jet analysis



W Boson Transverse Momentum

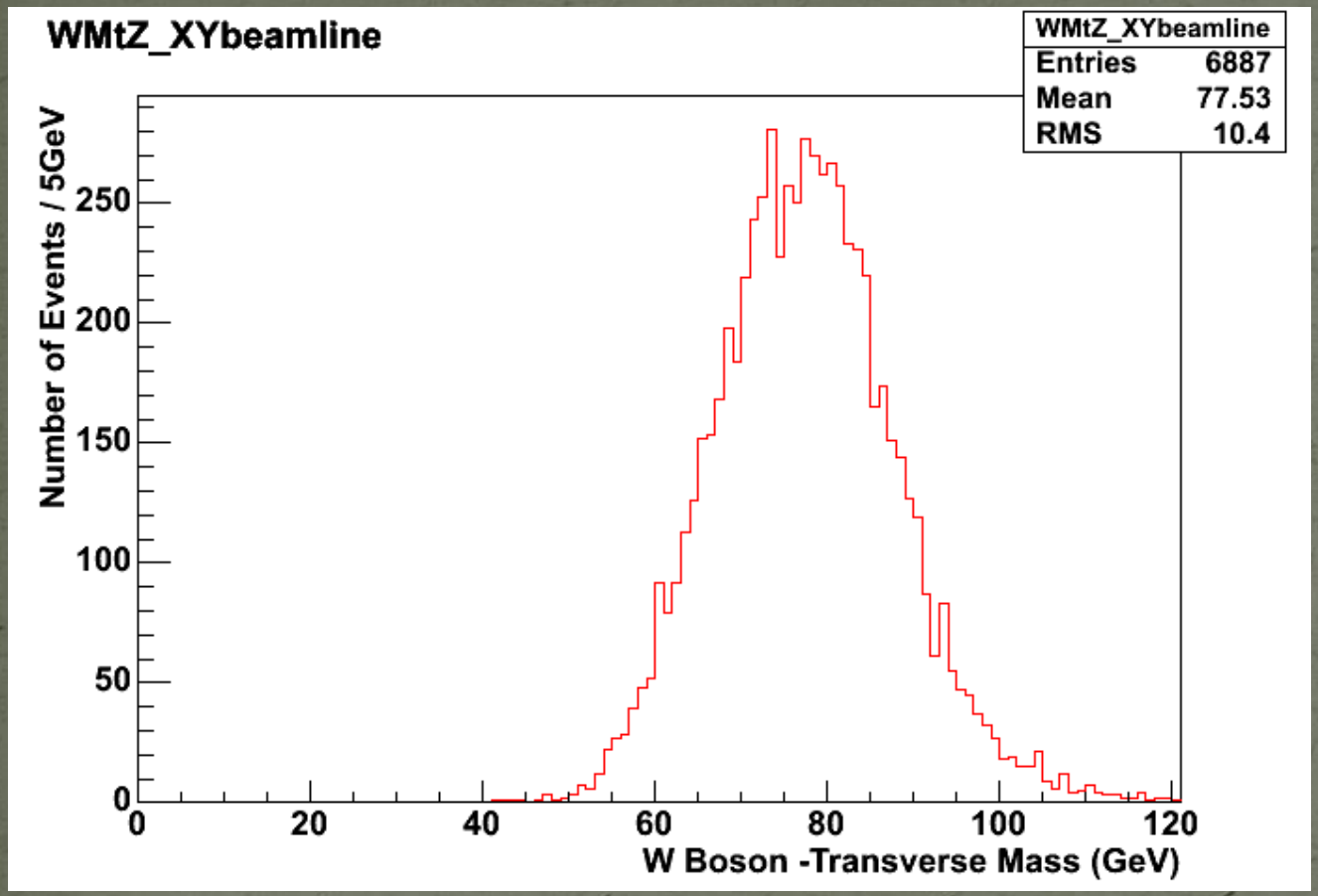


W Boson Rapidity



- Symmetrical in forward-backward region
- Confined to "Central" regions only

W Boson Transverse Mass



- Transverse Mass plots for W looks fine

Types of Cuts/nelectrons in sample	Number of Events	Explanation Of Cuts
All Electrons in Sample	698759	This includes QCD-"Non isolated tight", Loose and plug electrons too
"Tight" Electron Selection	19833	Selection Cuts for "Tight" are shown in slide 2
DeltaR("tight,closest jet) >=0.52	6894	From all the Jets in the events the one closest to electron is selected and distance cut is applied
MET>30 GeV	6894	No change
Transverse Mass> 20 GeV	6887	Number of Reconstructed W

Conclusions:

1. The “ W+jets Sample “ has been obtained from the Electron+jets sample
2. Look at the Jets in the W+jets sample