Understanding the Jets in the High Pt Electron Sample

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Outline of the Talk

- "Tight " Electron Cuts studied
- Reconstructed W Boson properties looked at
- Jets Picked with varying E_T and η_D
  - $5 < E_T < 10$ GeV AND $|\eta_D| <= 1.0$
  - $10 < E_T < 15$ GeV AND $|\eta_D| <= 1.0$
  - $E_T > 15$ GeV AND $|\eta_D| <= 2.0$ (Previous analysis cuts)

Strategy Followed:

2 Miilion Triggered High Pt electron events

"Tight " electron Selected

Reconstruct "W" event with missing Et >30 and transverse mass >20

"Electron Jet" Removed with Delta R<=0.4 Cut

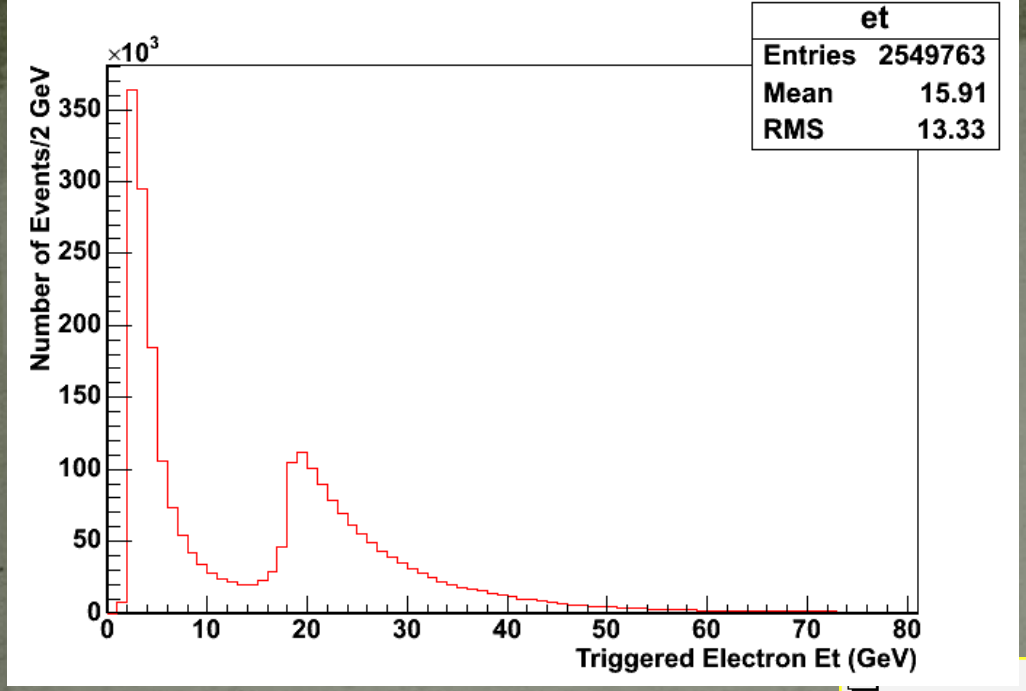
- L5 Corrected Jet Et >15 GeV
- Both MidPoint and Jet Clu with R=0.4 looked at
- Jet Eta <=|2.0|
- ΔR (e,jet)>=0.52

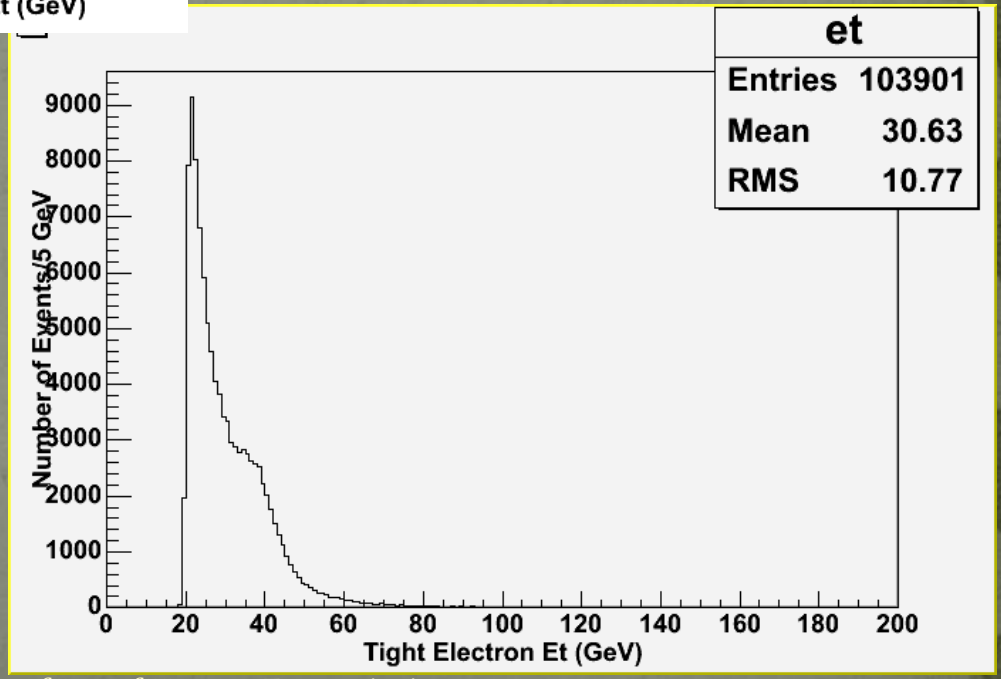
- Raw Jet Et >10 GeV and <15 GeV
- Jet Eta <=|1.0|
- Both MidPoint and JetClu R=0.4
- ΔR (e,jet)>=0.52

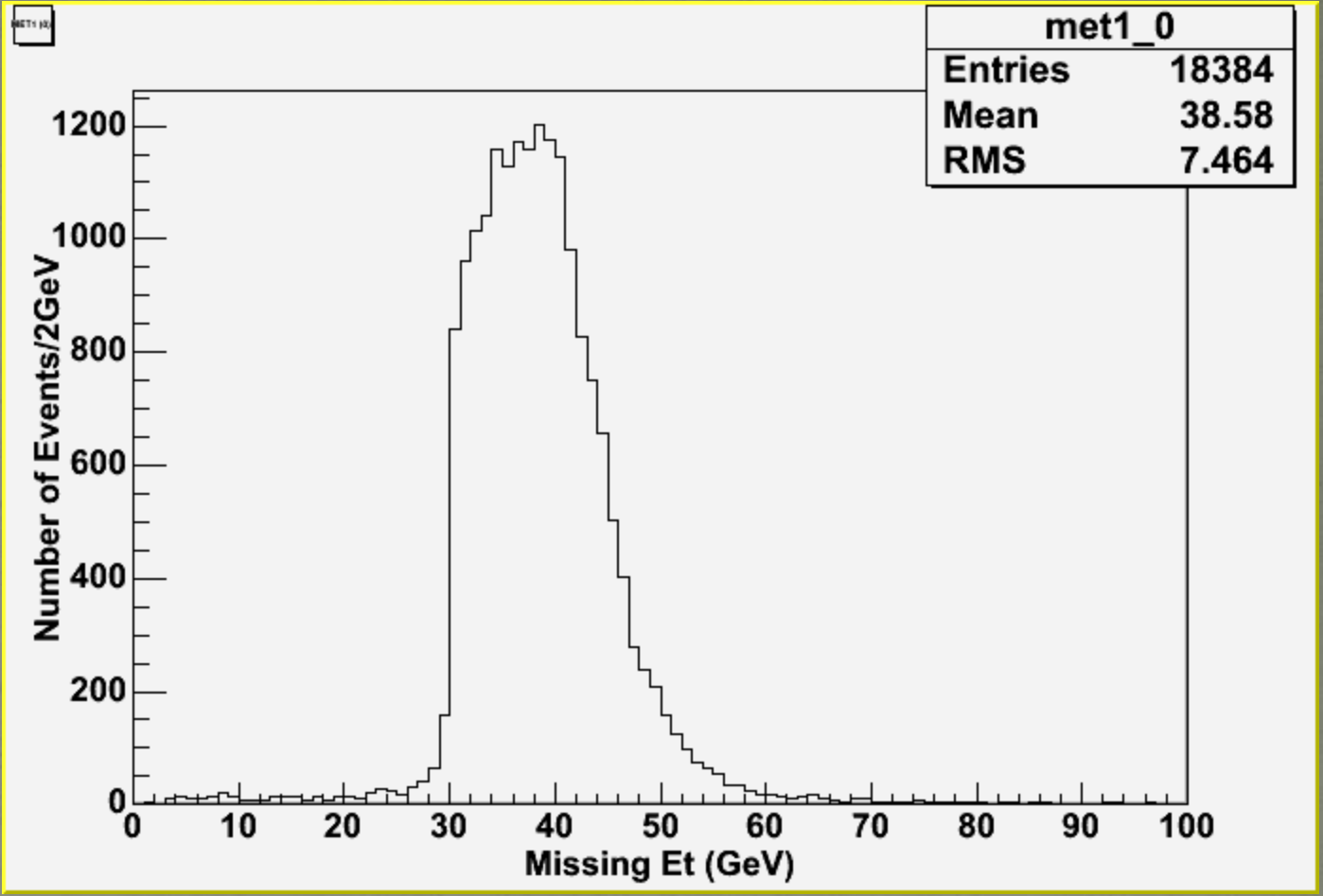
- Raw Jet Et >5 GeV and <10 GeV
- Jet Eta <|1.0|
- ΔR (e,jet)>=0.52

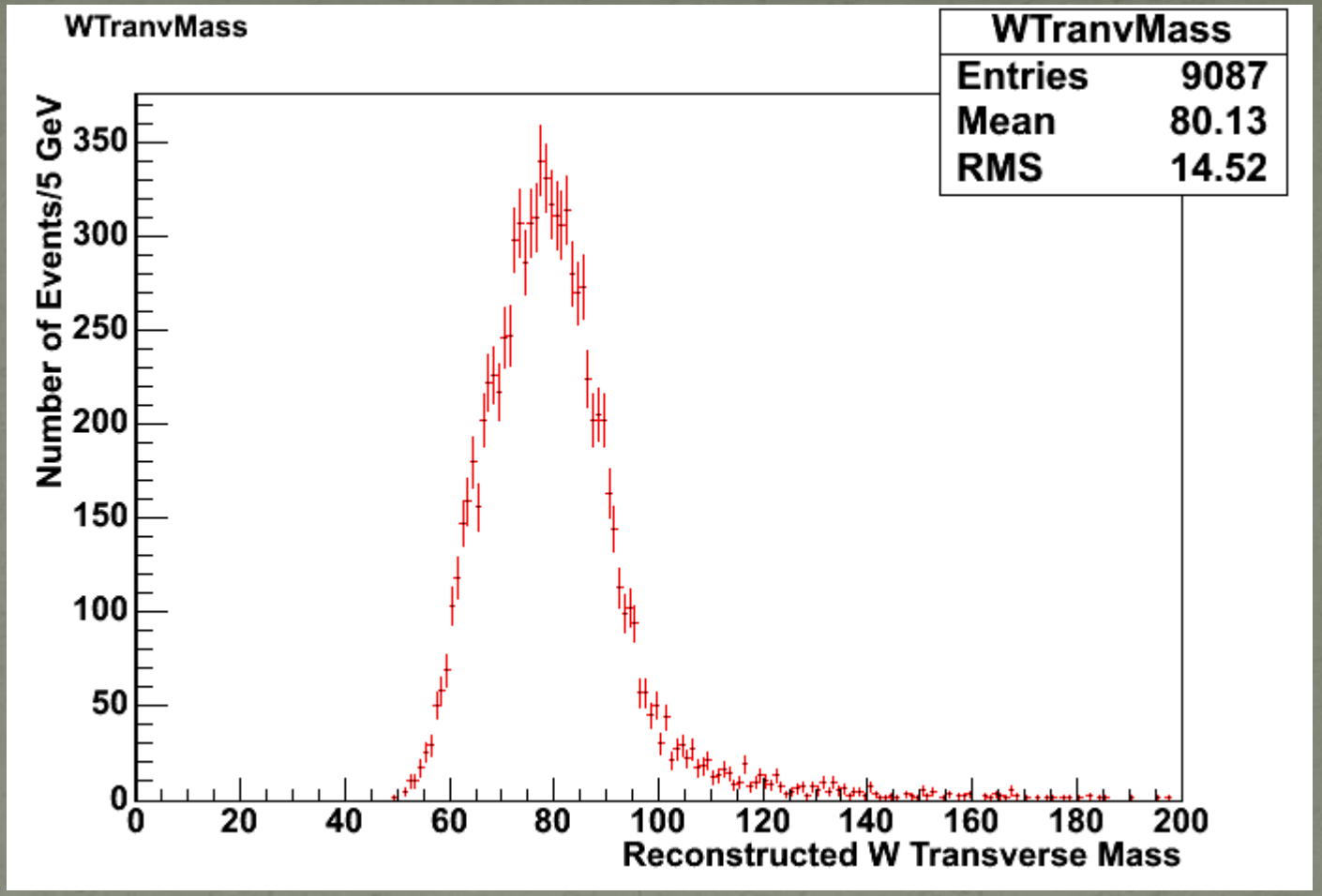
"Tight" Electron Cuts Applied

- E_T >20 GeV
- $|\eta_D|$ <=1.1
- Fiducial Region
- Beam Constrained Track P_T >10 GeV
- Had/Em <0.055+0.00045*E
- E/P <2.0 pr P_T>50 GeV
- -3.0 cm <Q_e* ΔX<1.5 cm
- $|\Delta Z|$<3 cm
- Strip χ^2 <10
- L_{shr}<0.2
- COT Segments (min 5 Hits- 3 Axial & 5 Stereo)
- Fractional Isolation <0.1


et
Entries 2549763
Mean 15.91
RMS 13.33
×10³
Number of Events/2 GeV
Triggered Electron Et (GeV)


et
Entries 103901
Mean 30.63
RMS 10.77
Number of Events/5 GeV
Tight Electron Et (GeV)


met1_0
Entries 18384
Mean 38.58
RMS 7.464
Number of Events/2GeV
0
200
400
600
800
1000
1200
0
10
20
30
40
50
60
70
80
90
100
Missing Et (GeV)


WTranvMass
WTranvMass
Entries 9087
Mean 80.13
RMS 14.52
Number of Events/5 GeV
0
50
100
150
200
250
300
350
0
20
40
60
80
100
120
140
160
180
200
Reconstructed W Transverse Mass

Conclusions:

More About Jets To come Later On