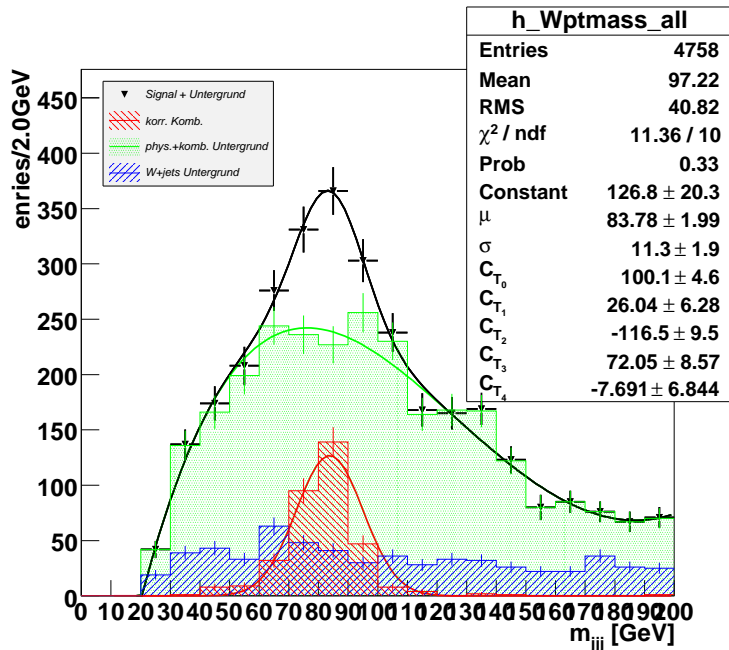
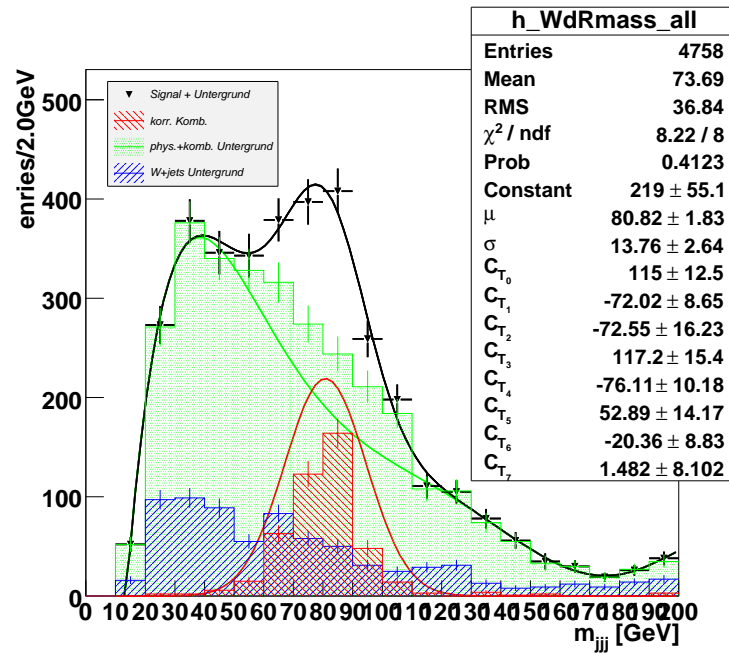
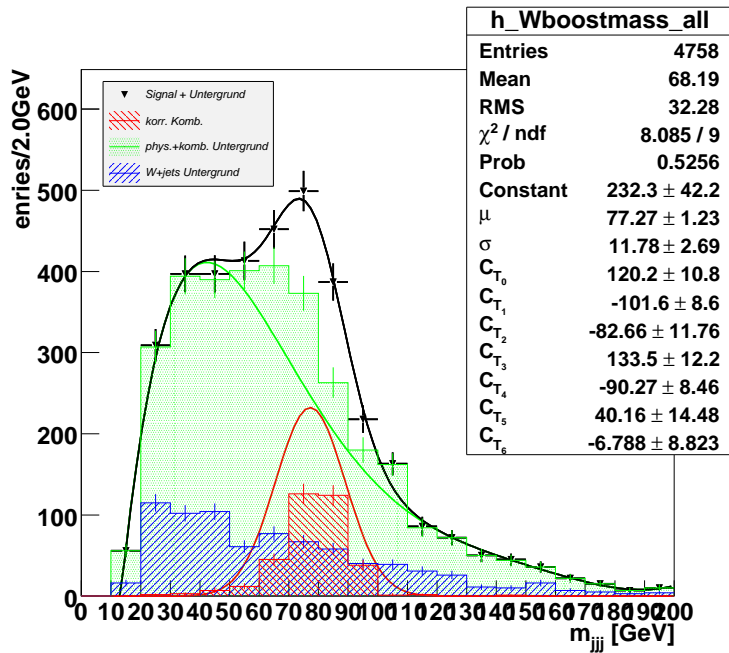


# cuts and reconstruction method

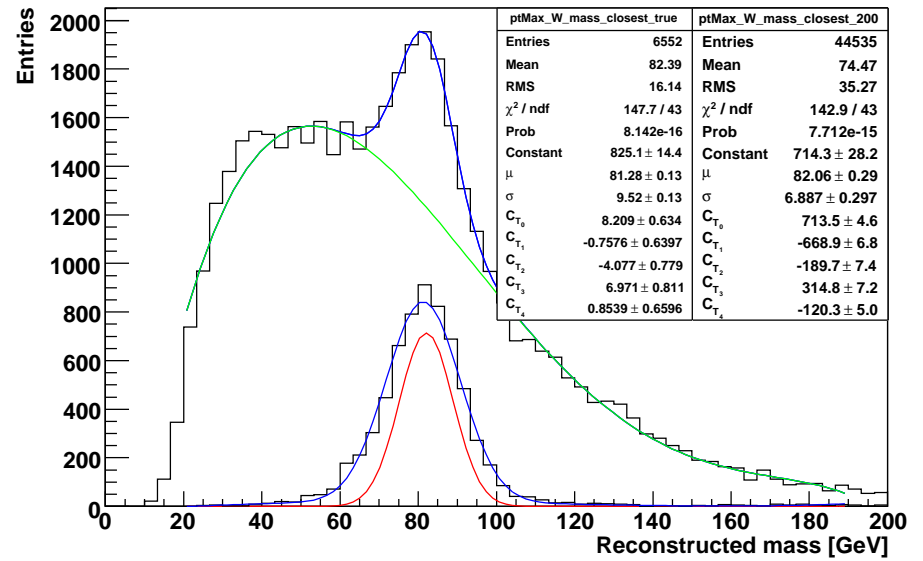
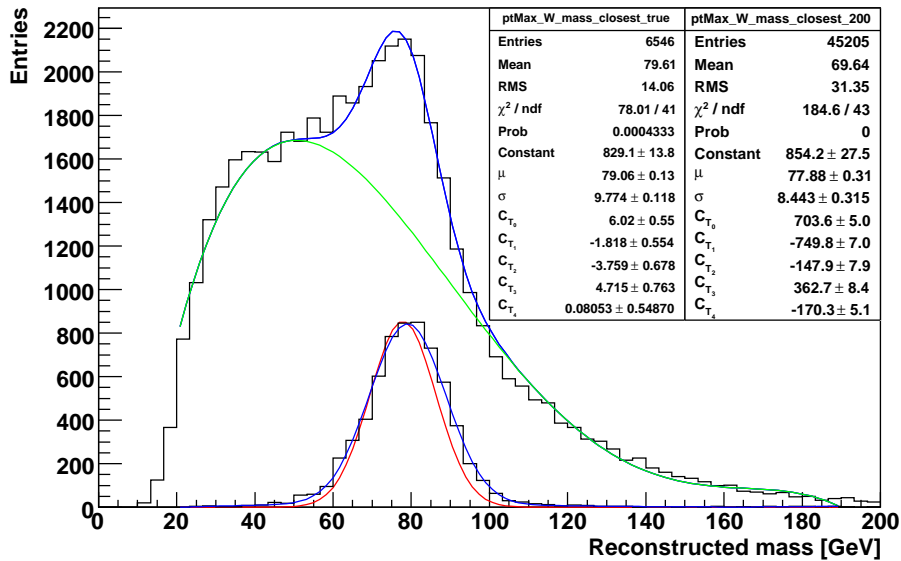
- electron cuts:
  - min pT : 20 GeV
  - max abs(eta) : 2.5
  - author : 1
  - isEM bitpattern: 0X37F7FF3
  - max etcone20 : 6 GeV
- muon cuts:
  - min pT : 20 GeV
  - max abs(eta) : 2.5
  - max etcone20 : 6 GeV
- jet cuts:
  - min pT : 20 GeV
  - max abs(eta) : 2.5
  - min distance to leptons: 0.4
- event selection cuts:
  - leptons : exactly 1
  - #jets : > 4  
(3 of them > 40 GeV)
  - min missingET : 20 GeV
- take jet triplet maximising pt as top
- in lab syst **OR** boost to top CM and take jj of jjj with minimal dR(j,j) as W
- **OR** boost to top CM and take jj of jjj not using the jet with highest momentum (would be the b) as W
- **OR** take jj of jjj with highest pt

# W reco



- W with 3 different reco methods:  
 top left not highest p after boost  
 right dRMin  
 below left Maxpt

# W dR method

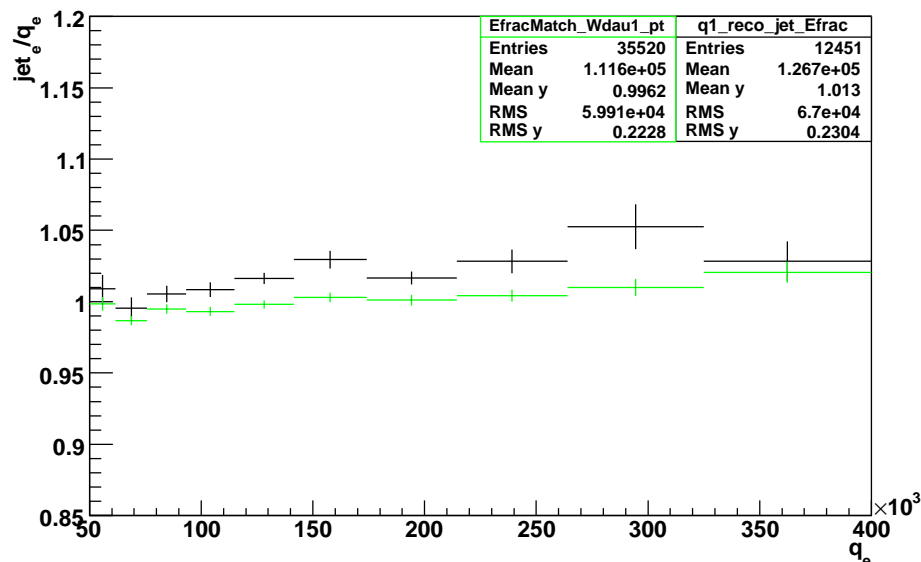


- jj mass spectrum fitted with Gaussian (red) + Chebychev (green)
- min dR was calculated in CM of top

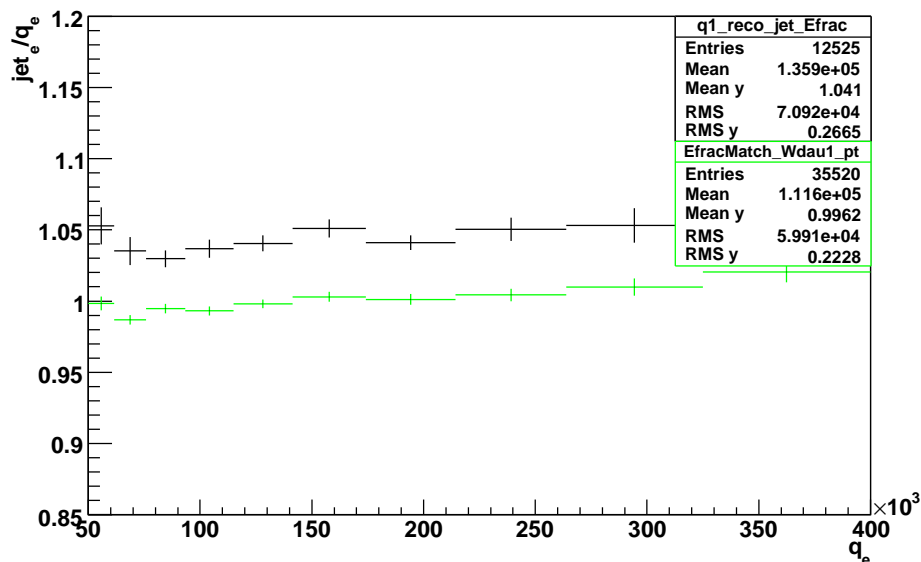
- at least one two jet combination of the jet triplet is within 20GeV window around W mass
- min dR was calculated in lab syst

# fraction of initial Wq energy in Wjets

q1\_reco\_jet\_Efrac



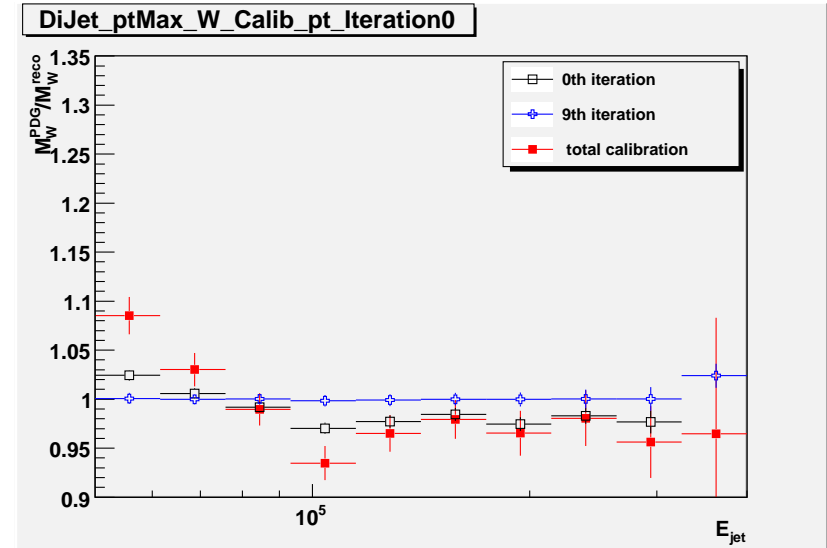
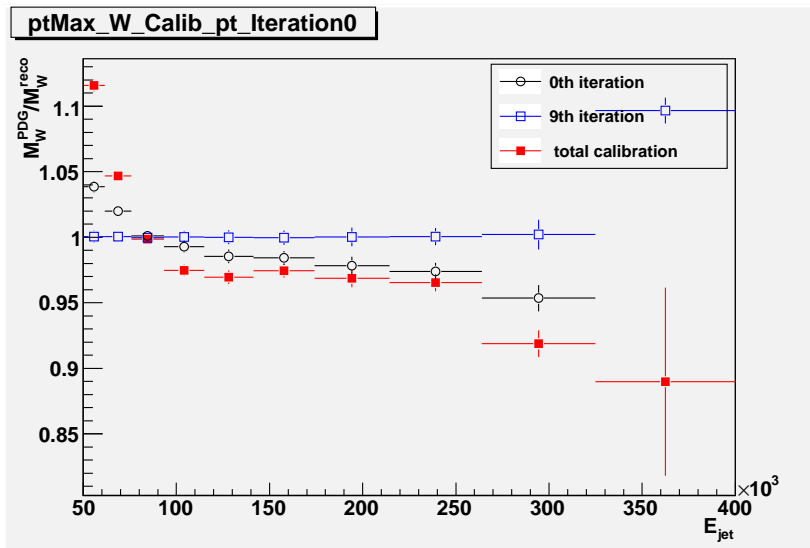
q1\_reco\_jet\_Efrac



- look at energy fraction  $jet_e/q_e$
- **black** for qqb looking for jet with best match in all reco jets in container requiring  $dR(q, jet) < .2$   
 $\Rightarrow$  expect some bias from pt cut in event selection
- **green** matching those jets used for top to qqb and for W to qq requiring  $dR(q, jet) < .2$   
 $\Rightarrow$  expect additional bias from pt maximising reconstruction decision

- left min dR was calculated in CM of top, right in lab syst

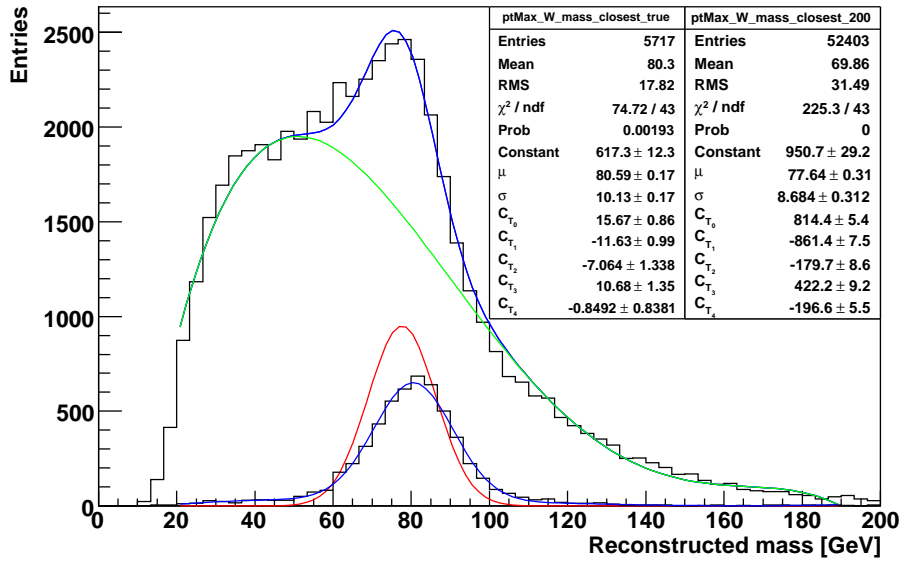
# in situ calibration



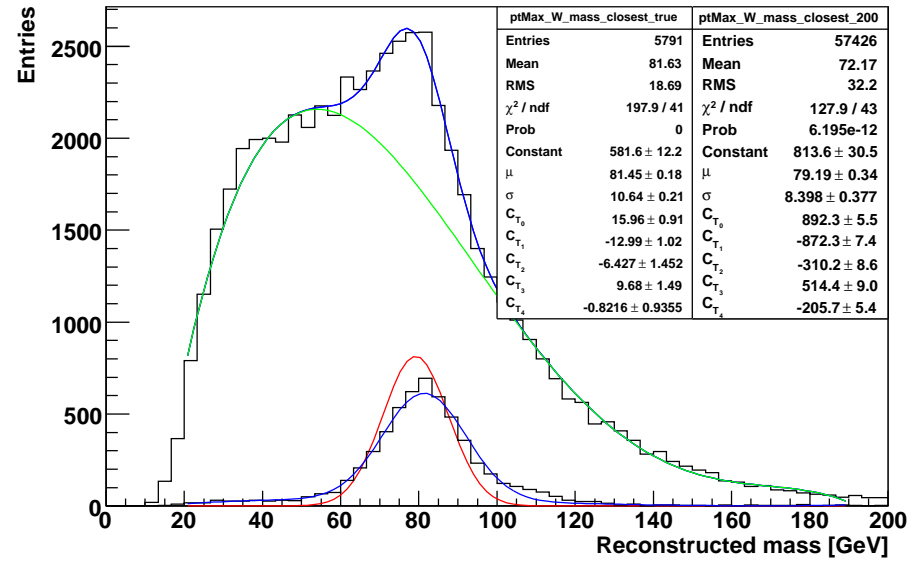
- take jets reconstructed W (here ptmax) and look at  $M_W^{PDG}/M_W^{reco}$  (left) or take all 2 jet combinations and look at  $M_W^{PDG}/M_{jj}^{reco}$  (right) in different energy bins after fitting
- ⇒ the prior has the benefit of taking into account all other biases and features of the reco method
- ⇒ the latter has the benefit of being more universal.

Should try to understand bias in more detail and then find correction from method with reco selected jets to jj spectrum

# apply ISC

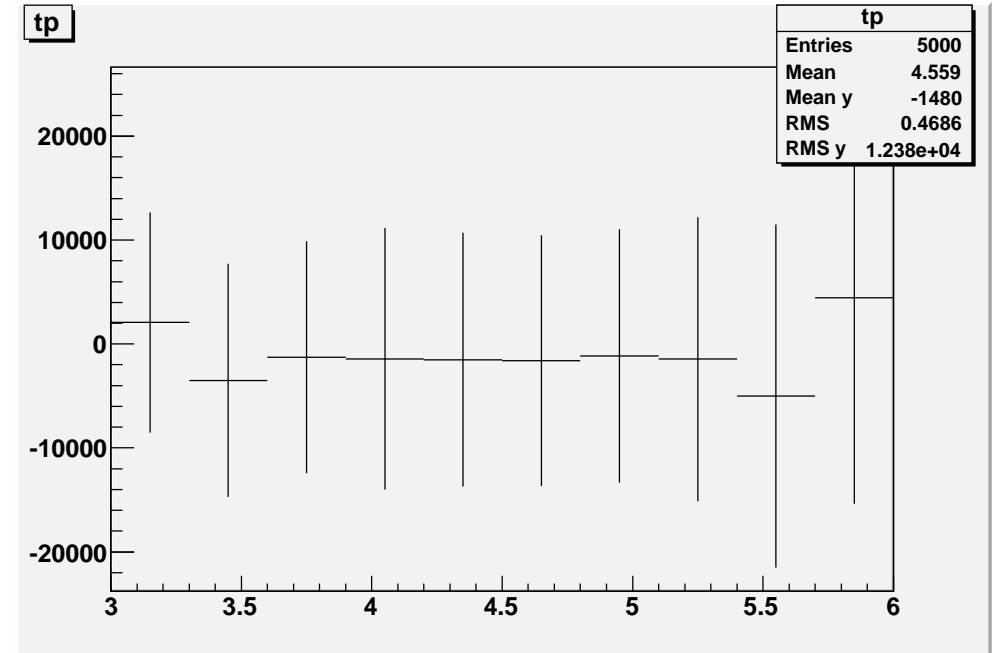
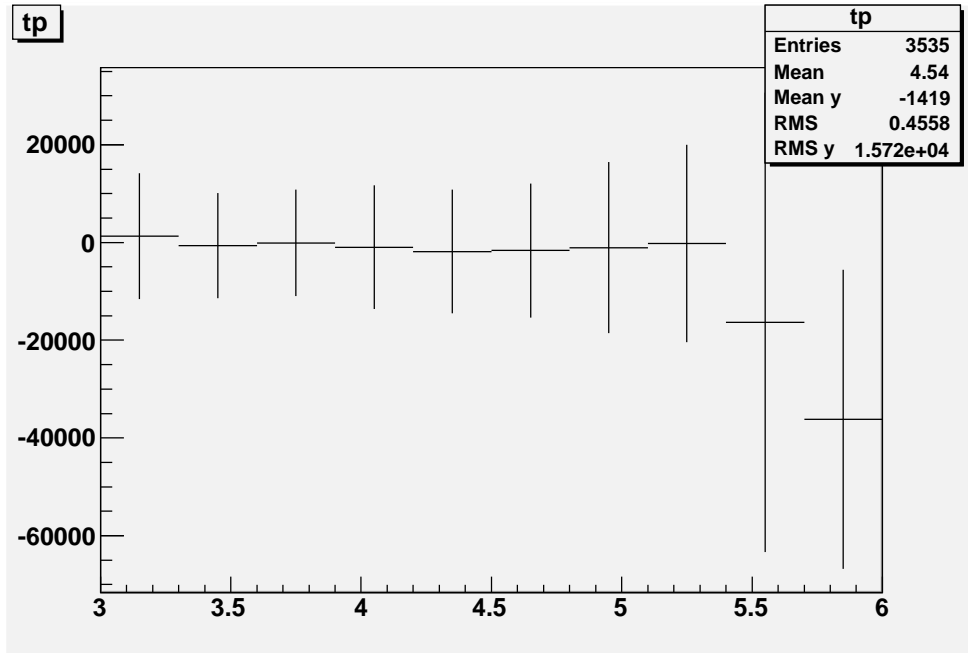


- non calibrated



- calibrated

# apply ISC



- MET\_Truth.et()-MET\_LocHadTopo.et() vs log10(sum cluster energy)
- 105200e357\_s462\_r541

- MET\_Truth.et() - MET\_LocHadTopo.et() vs log10(sum cluster energy)
- 105200e357\_s462\_r579

# Backup Slides