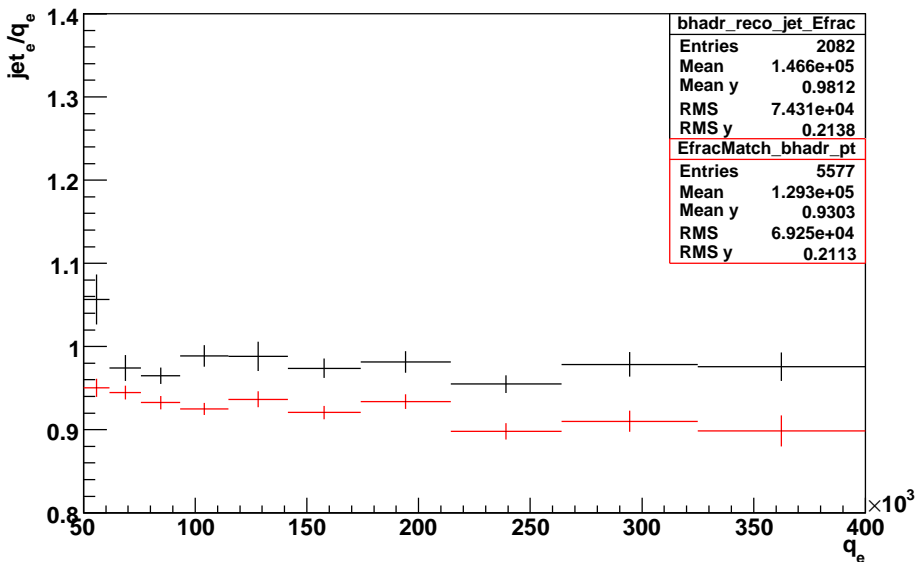


cuts and reconstruction method

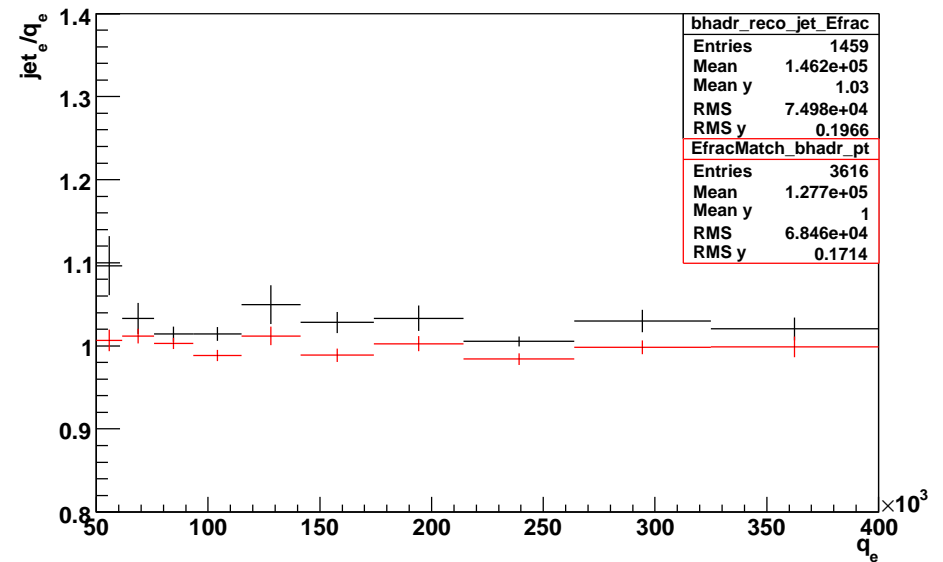
- electron cuts:
 - min pT : 20 GeV
 - max abs(eta) : 2.5
 - author : 1
 - isEM bitpattern: 0X37F7FF3
 - max etcone20 : 6 GeV
- muon cuts:
 - min pT : 20 GeV
 - max abs(eta) : 2.5
 - max etcone20 : 6 GeV
- jet cuts:
 - min pT : 20 GeV
 - max abs(eta) : 2.5
 - min distance to leptons: 0.4
- event selection cuts:
 - leptons : exactly 1
 - #jets : > 4
(3 of them > 40 GeV)
 - min missingET : 20 GeV
- take jet triplet maximising pt as top
- 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

b JES influence of semi leptonic quark decays

bhad_r_reco_jet_Efrac



bhad_r_reco_jet_Efrac

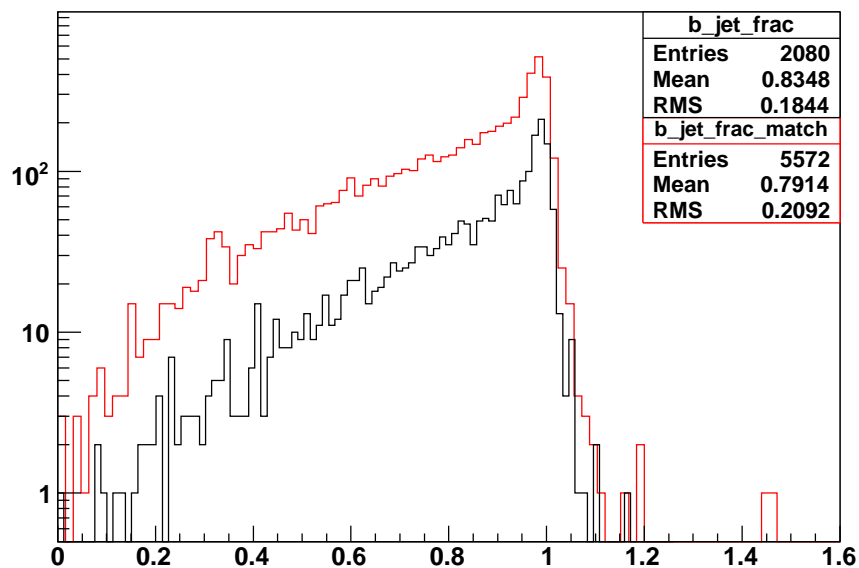


- look at energy fraction jet_e/q_e require $|\eta_b| < 2$
- **black** for qq_b looking for jet with best match in all reco jets in container requiring $dR(q, jet) < .2$
⇒ expect some bias from pt cut in event selection
- **red** matching those jets used for top to qq_b and for W to qq requiring $dR(q,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

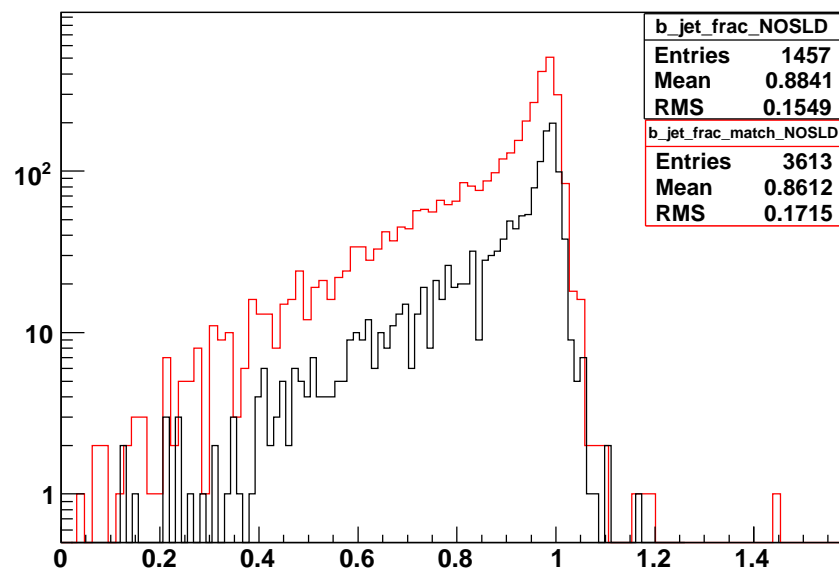
- same as left, but no events with semi leptonic decays of b daughters

fraction of initial b energy in bjet

ptMax_closest_b_jet_frac_match (event_selected&&ptMax_closest_b_jet_frac_match=0&&abs(ptMax_closest_bhadr_eta) < 2&&ptMax_closest_b_jet_frac_match<1.5)



ptMax_closest_b_jet_frac_match (ptMax_closest_b_semi lept_decay = 0 && event_selected && ptMax_closest_b_jet_frac_match = 0 && abs(ptMax_closest_bhadr_eta) < 2 && ptMax_closest_b_jet_frac_match < 1.5)

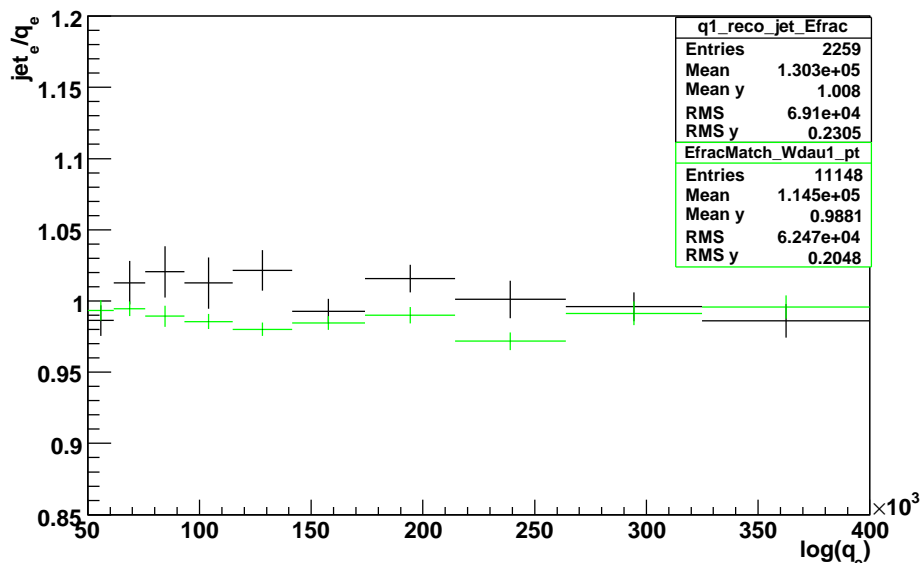


- look at energy fraction jet_e / q_e
- **black** for qqb looking for jet with best match in all reco jets in container requiring $dR(q, jet) < .2$
 \Rightarrow expect some bias from pt cut in event selection
- **red** matching those jets used for top to qqb and for W to qq requiring $dR(q, jet) < .2$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

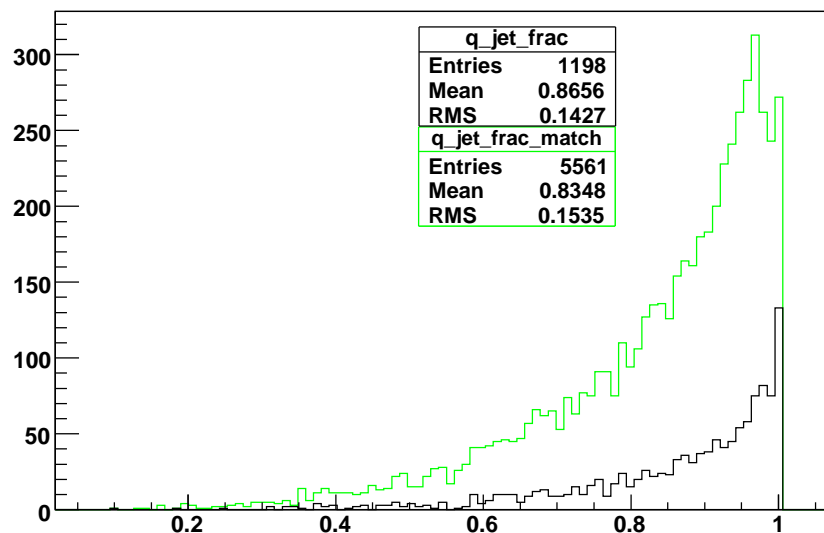
- same as left, but no events with semi leptonic decays of b daughters

fraction of initial Wq energy in Wjets

q1_reco_jet_Efrac



ptMax_closest_W_jet1_frac_match+ptMax_closest_W_jet2_frac_match (ptMax_closest_W_jet2_frac_match!=0&&event_selected==1)

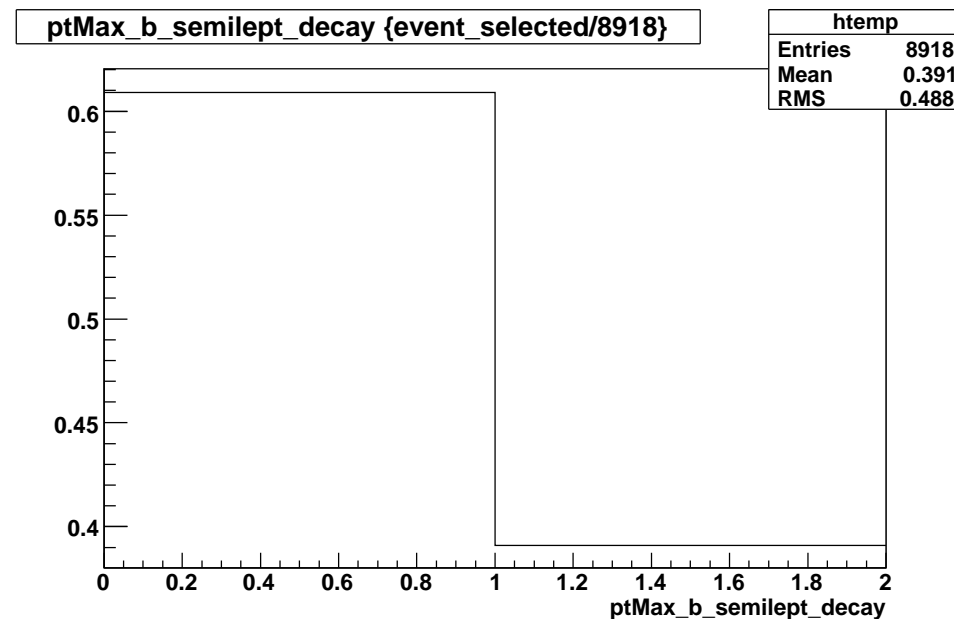
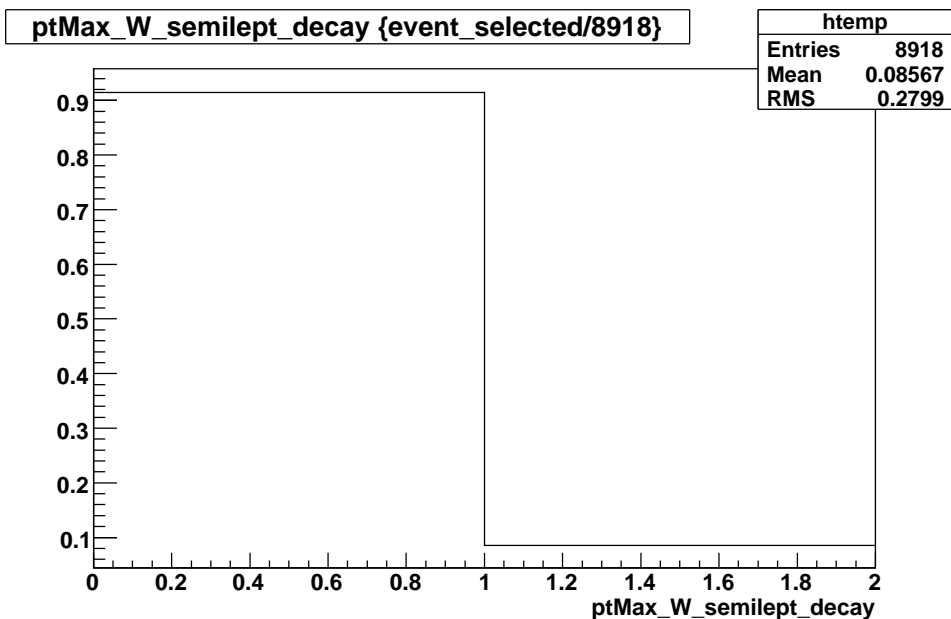


- look at energy fraction jet_e / q_e
- **black** for qq looking for jet with best match in all reco jets in container requiring $dR(q, jet) < .2$
 \Rightarrow expect some bias from pt cut in event selection
- **green** matching those jets used for top to qq and for W to qq requiring $dR(q, jet) < .2$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

- look at energy fraction $\frac{jet1_e + jet2_e}{W_e}$

Backup Slides

fraction of events with semi leptonic decays



- fraction of events with semi leptonic decays of W daughter quark

- fraction of events with semi leptonic b decays

quark sorting

