

From: Jan Balewski <balewski@mit.edu>  
 Subject: **Re: after background>50 GeV**  
 Date: May 17, 2010 5:29:12 PM EDT  
 To: "w2009@MIT.EDU" <w2009@mit.edu>  
 8 Attachments, 318 KB

Hi,  
 I lost patience and generated 'movie' for all Ws and only those wit ET>50  
 (still 10 jobs out of ~500 is pending).

Full 'movies' are posted  
 ET>50 (left plot)  
<http://www.star.bnl.gov/~balewski/tmp/may17/allET50.pdf>

All Ws (right plot, the reference)  
<http://www.star.bnl.gov/~balewski/tmp/may17/may17-all.pdf>

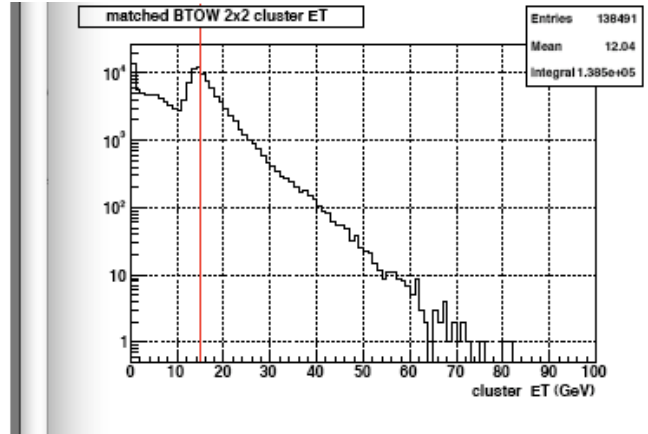
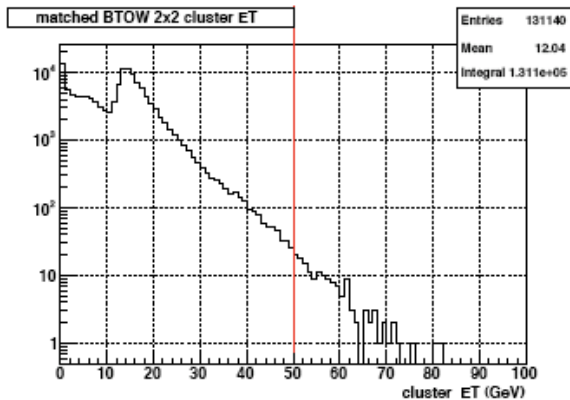
We looked with Joe on those plots and we both concluded there is no silver bullet, just a low-impact iron once .

In summary we can speculate (w/o checking if a single event passes multiple conditions listed below)

- \* 2 events were di-jets with one jet at eta=-1, passed near isolation cut (item 2)
- \* 5 events were di-jets with unbalanced pt and passed signed pT cut (item 3)
- \* 1 event : pi0, converting on e+ & e- (item 4)
- \* 5 events have global 2D DCA to the vertex above 5 mm (item 5)
- \* 2 to 5 of events were (already) rejected from the spin sorting due to Q/PT (item 6)

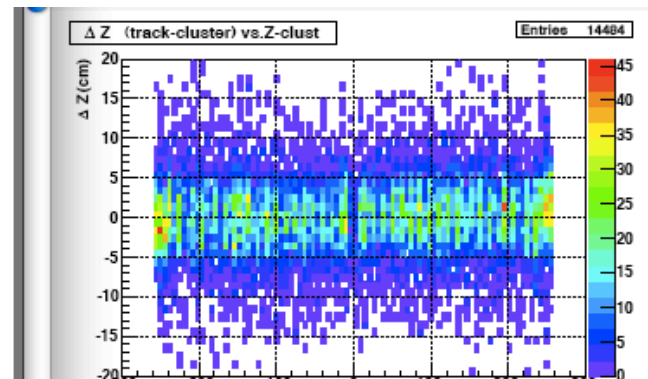
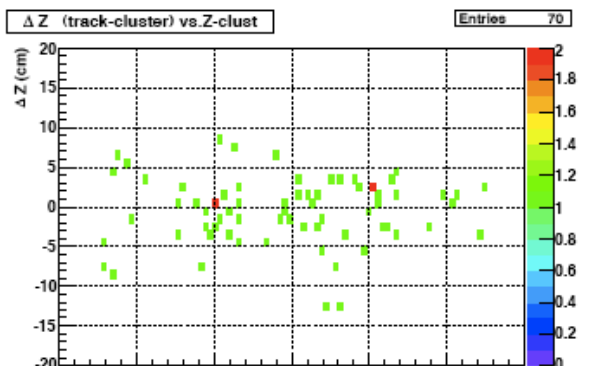
Below are side by side respective plots (left ET>50, right all )

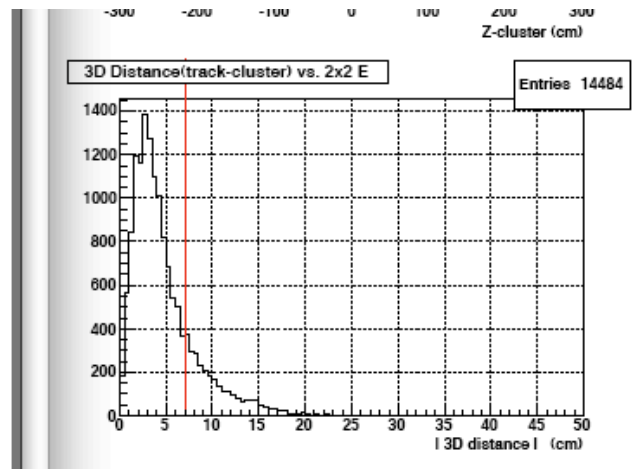
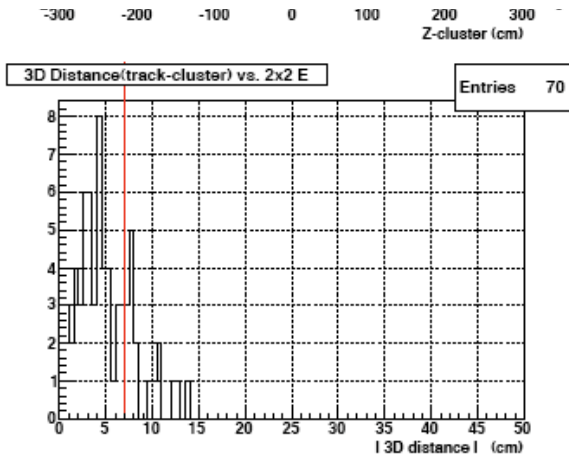
The difference is only on 2x2 cut (red line), page 7 (fig)



1)----- There was an idea to look at the measure of pileup contamination, page 9 shows how reco tracks agrees with 2x2 center of gravity (fig).

Top is just Z-distance - nothing abnormal on the left.  
 Bottom is 3D distance and our cut - looks reasonable.



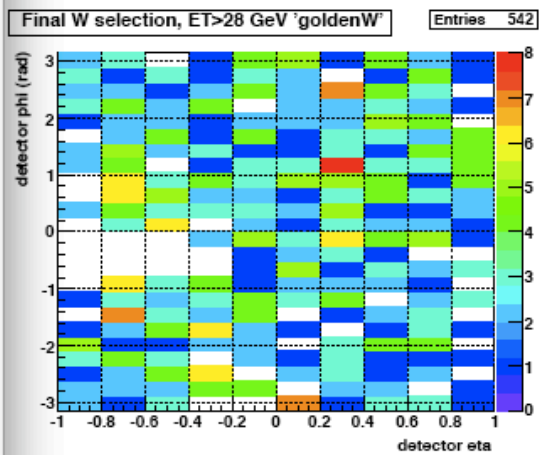
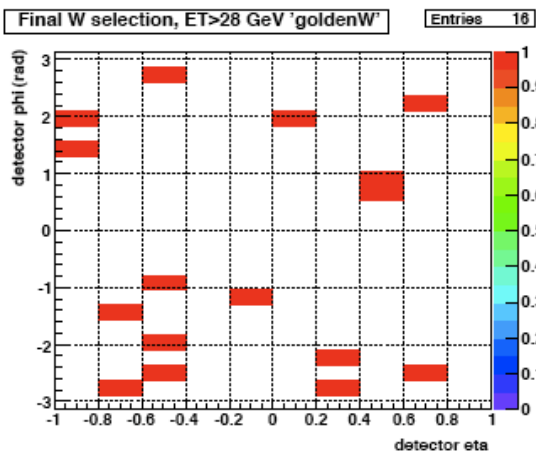


2)----- Gene's observation :

On May 17, 2010, at 3:03 PM, Gene Van Buren wrote:

There appears to me to be a concentration at  $\phi \sim -2$  to  $-2.5$ ?

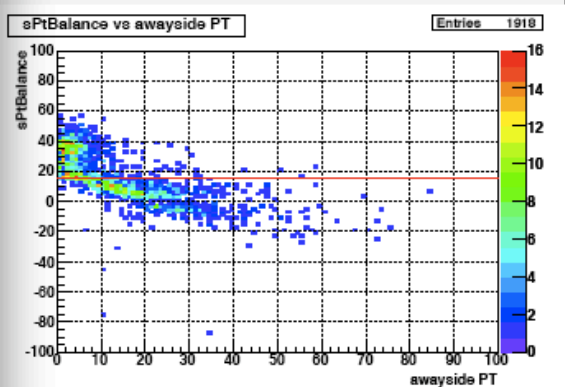
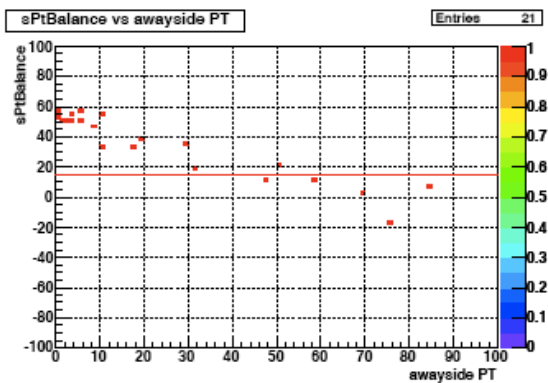
(fig), page 13. Perhaps ? 2 events have reco 2x2 cluster at  $\eta = -1$ . It could have been di-jet which part we missed.



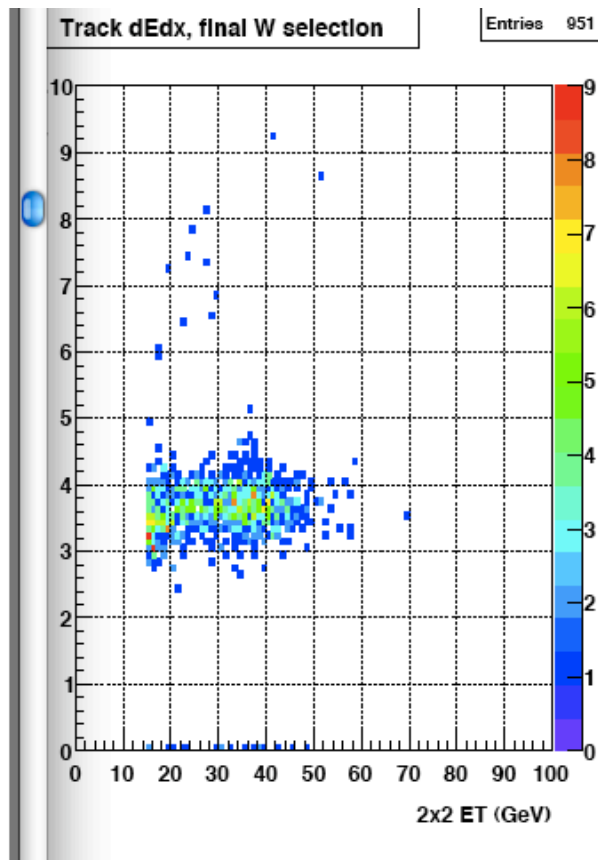
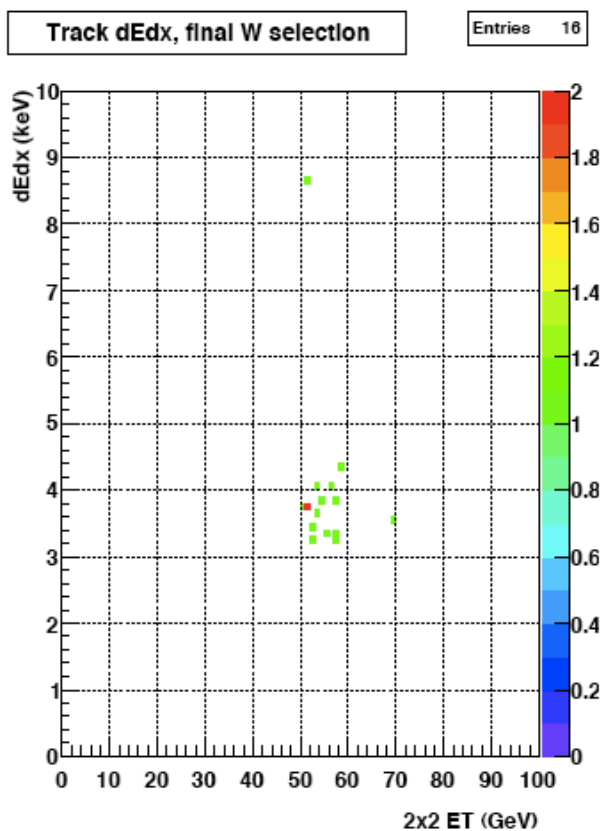
3)----- page 14 (fig) . Looks like there is ~50% of di-jet events in this sample on the left.

One sees on away side there was 20 or 50 GeV ET ( used in the old version of W-algo, now we cut where the red line is).

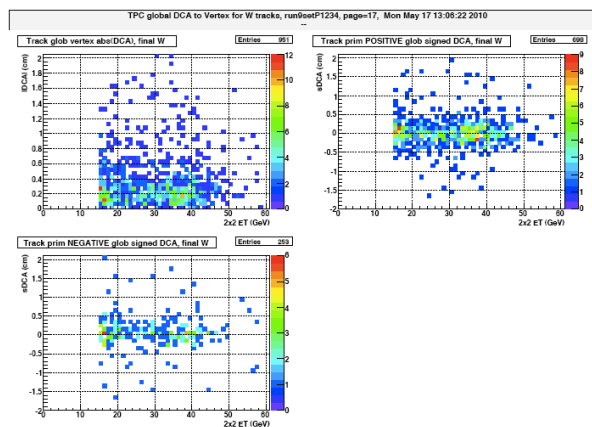
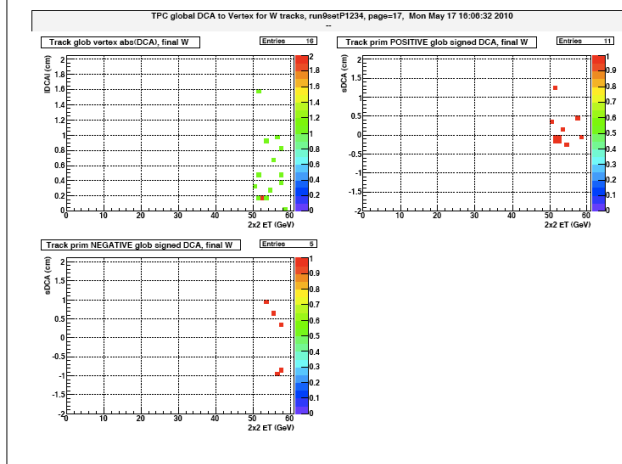
Now we have 2x2ET of 50+ and much less on away side so signed pT balance is still above 15 GeV and we accept such events



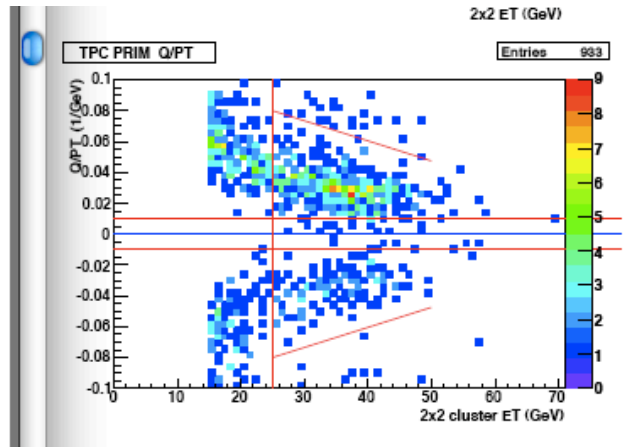
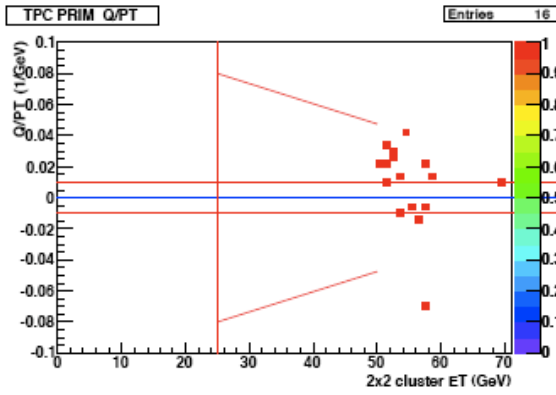
4)----- the dedx for those tracks is ~MIP. Except for one. This one can be leading pi0, converting on e+ & e- reco as one high pT track with double dedx.  
 (fig)



5)----- (fig) 4 out of 5 W- events have global track 2D DCA to the vertex above 5 mm. perhaps those are pileup tracks. Only 1 out of 11 W+ tracks is in this category. Page 17

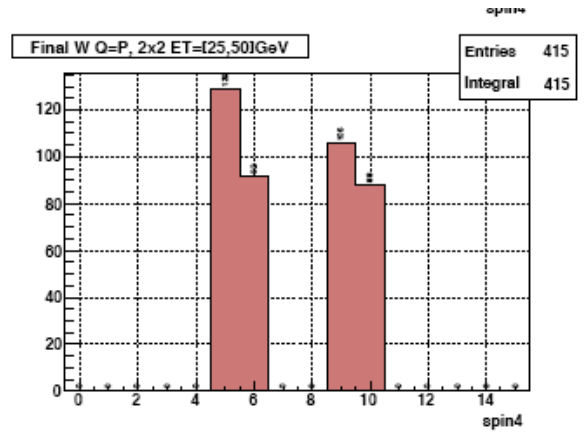
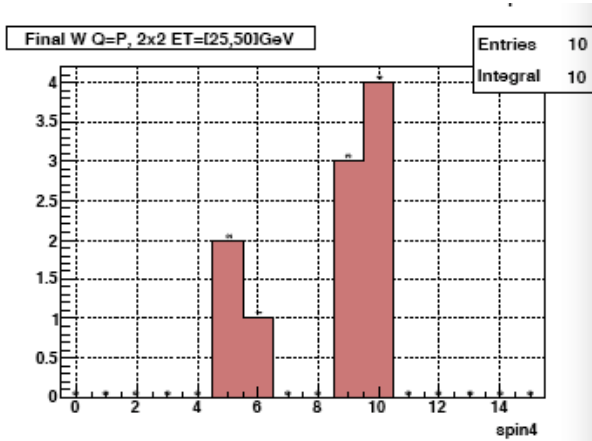


6)----- (fig) between 2 to 5 of events were (already) rejected from the spin sorting due to Q/PT cut, page 24



7)----- AL(W+) impact (fig), page 25

The 10 surviving W+ events spread over 4 spin states as follows: 2+1+3+4 , so adding them to the full sample of ~100 events per spin state does not change AL in significant way.



Draw your conclusions.

We have meeting tomorrow at 5 as usually, show your stuff.  
Jan