

# System Tests Report – Dec 6

v4r7: Fixed memory leak in onboard filter. AcdRecon changed to cut on veto discriminator rather than energy.

v5r0: Introduce new version of G4, bug in G4Propagator (almost immediately fixed). Lots of differences between between v5r0 and v4r7 distributions.

v5r0p1: Processing time decreased by a factor of three.

- Decrease in the number of position hits.

- Change in the distribution of particle types producing pos. hits.

- Increase in the energy of position hits.

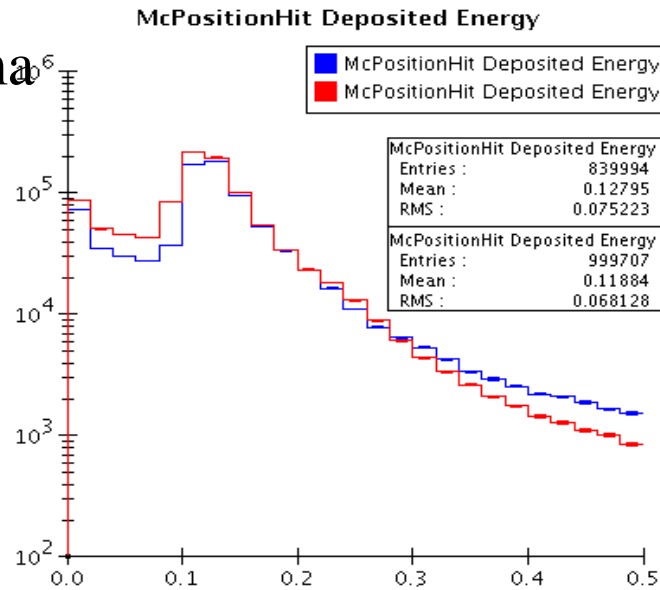
- Change in the number and energy of integrating hits.

- Same number of tracks, but increase in the track energy.

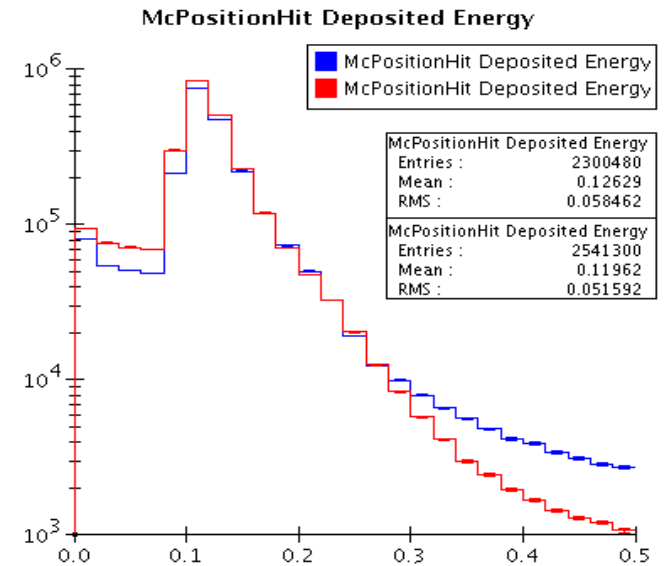
# Position Hit Energies

This is the distribution of energy for MC hits in the tracker or ACD.

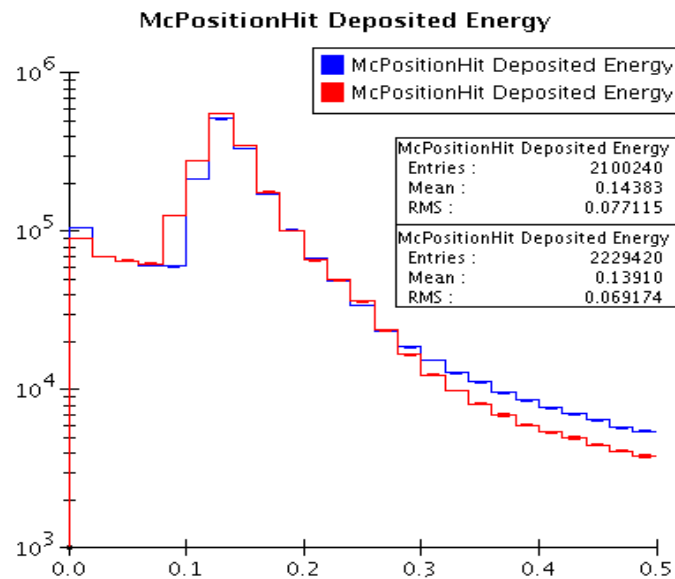
Gamma



Muon

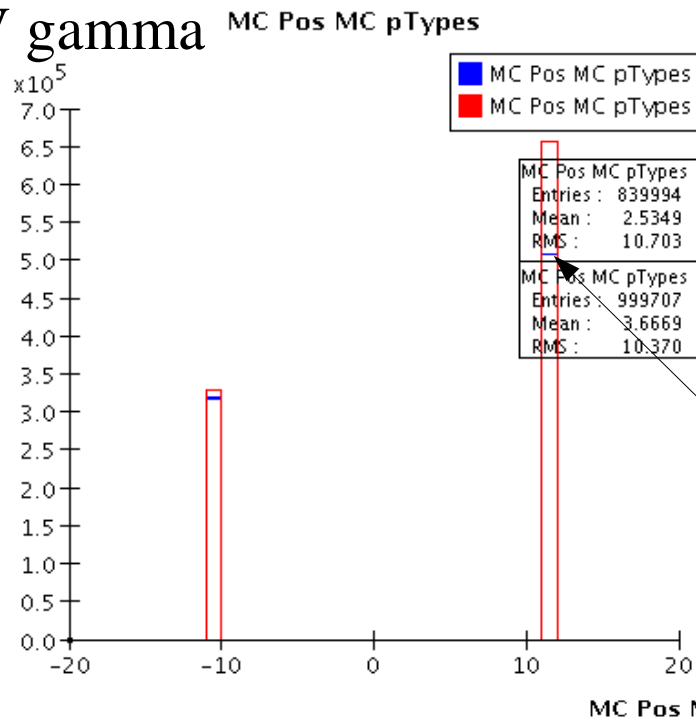


Proton

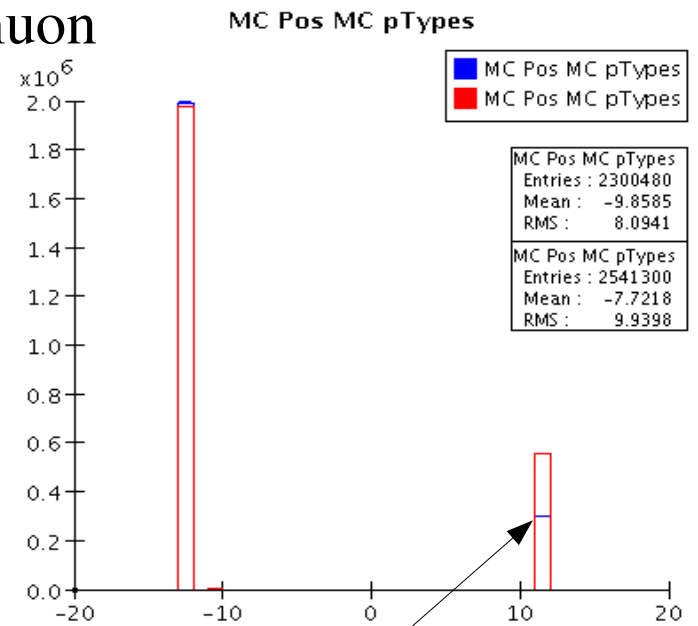


# Position Hit Particle Types

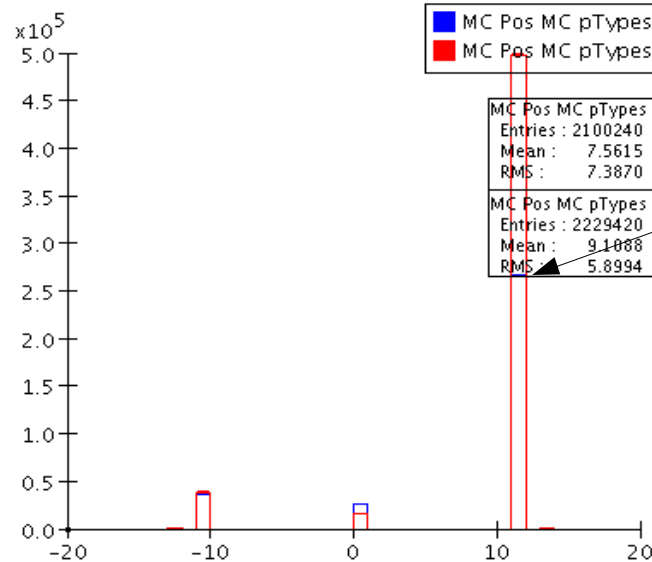
1 GeV gamma



1 GeV muon



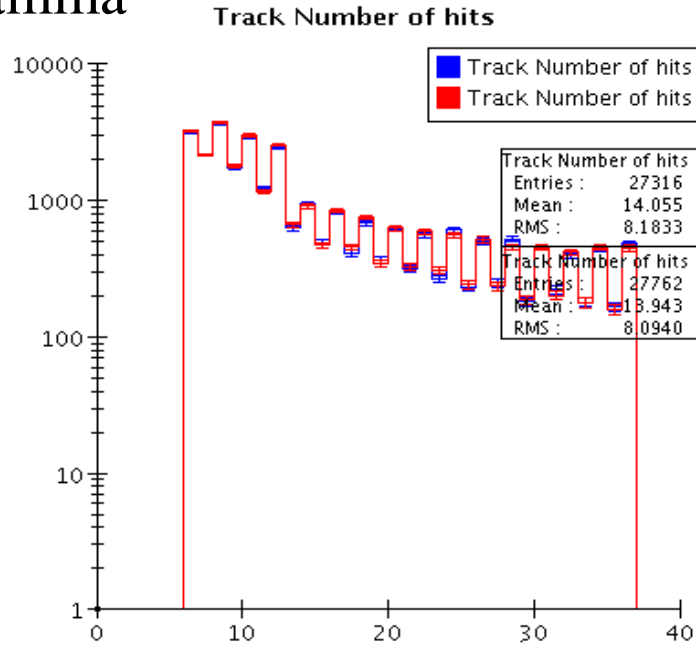
1 GeV Proton



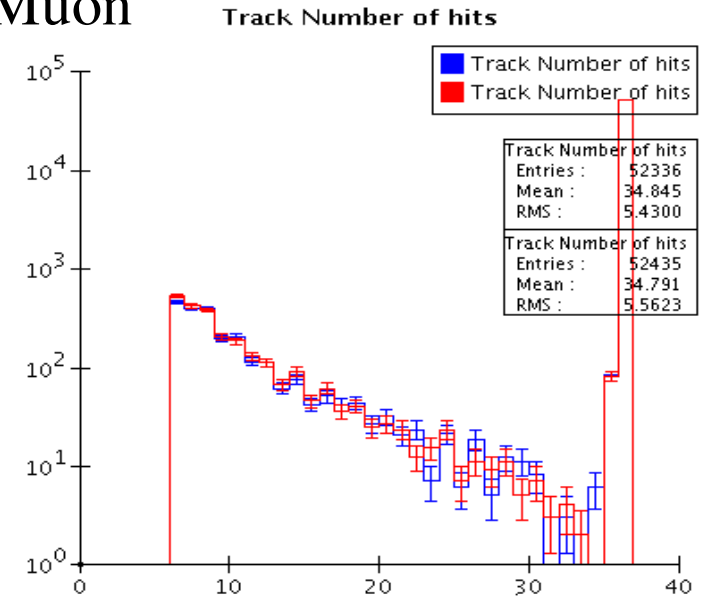
We now have significantly fewer electrons producing position hits

# Clusters per track

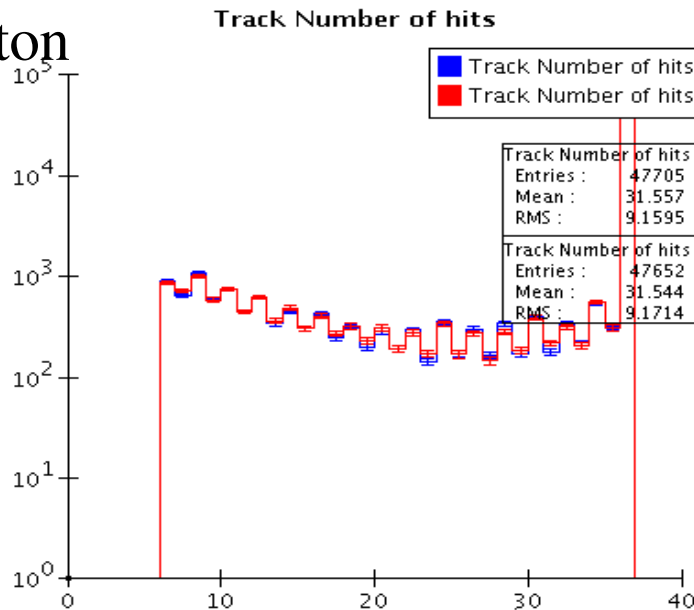
1 GeV gamma



1 GeV Muon

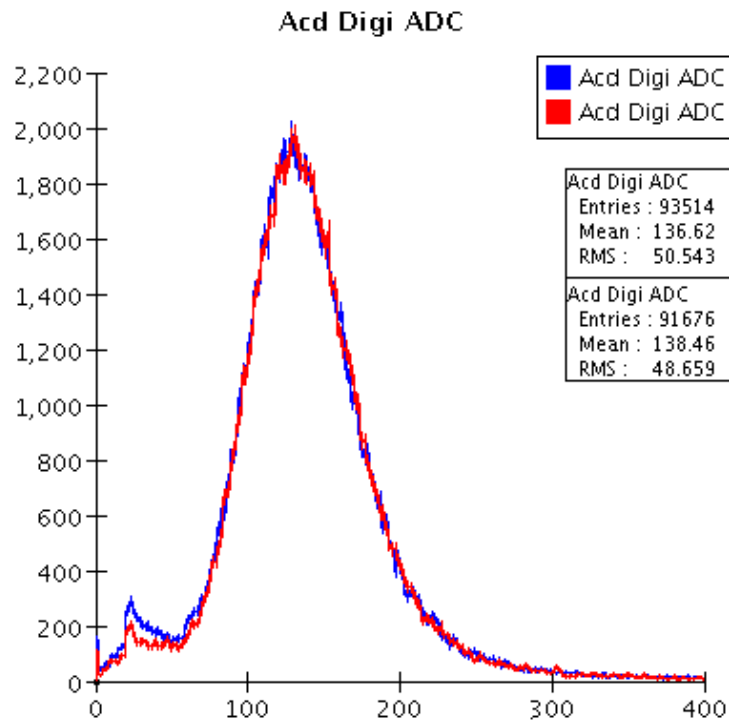


1 GeV proton



The number of tracks and the number of clusters per track has remained the same between v4r7 and v5r0p1.

# ACD Digi

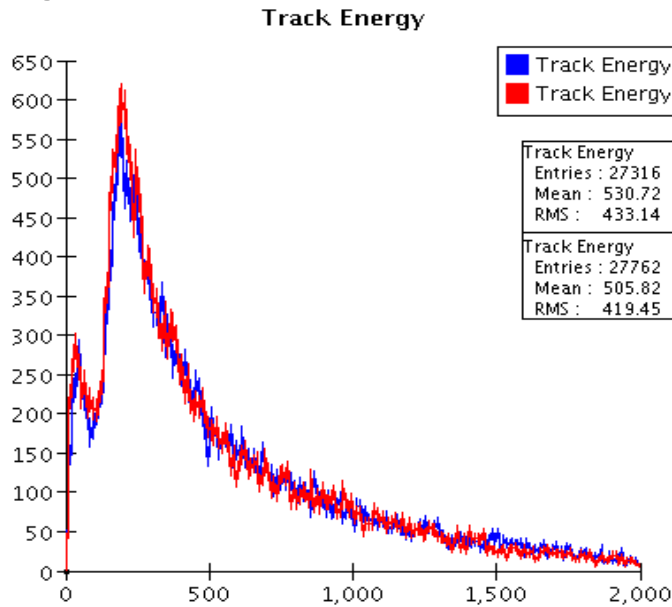


1 GeV vertical protons

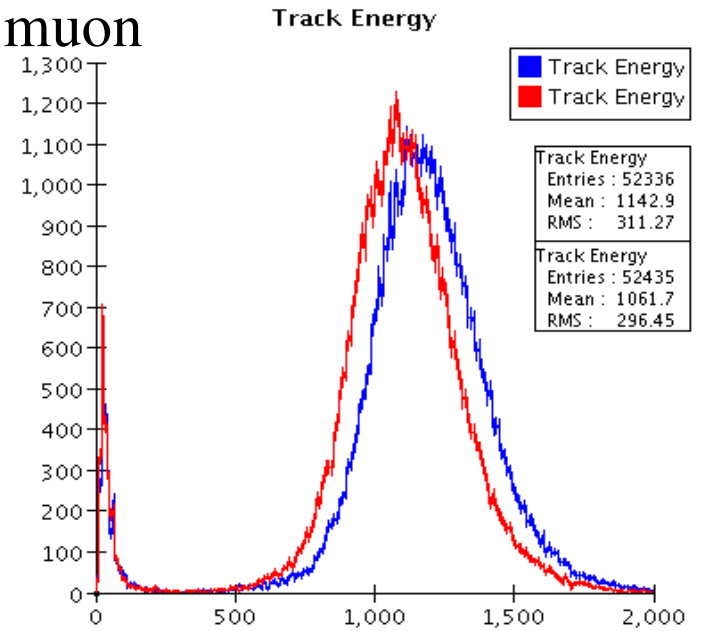
The KS test finds significant differences for this distribution for several tests, but this is the only one where I can see a difference.

# Recon Distributions

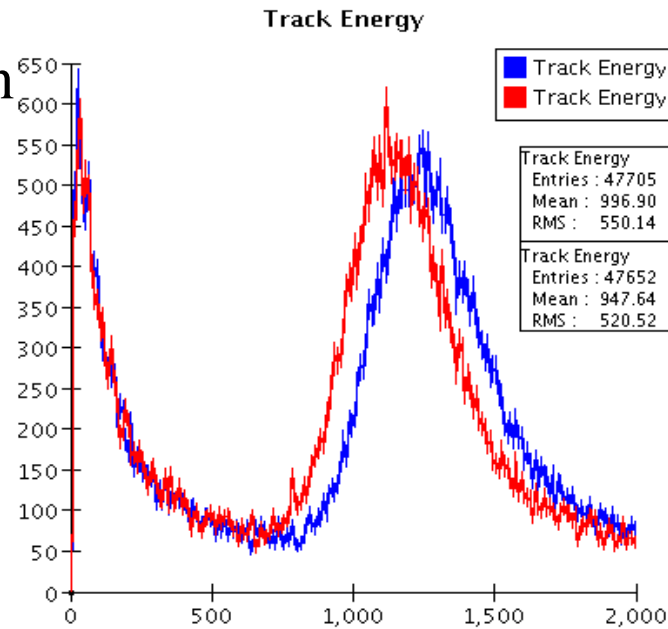
1 GeV gamma



1 GeV muon

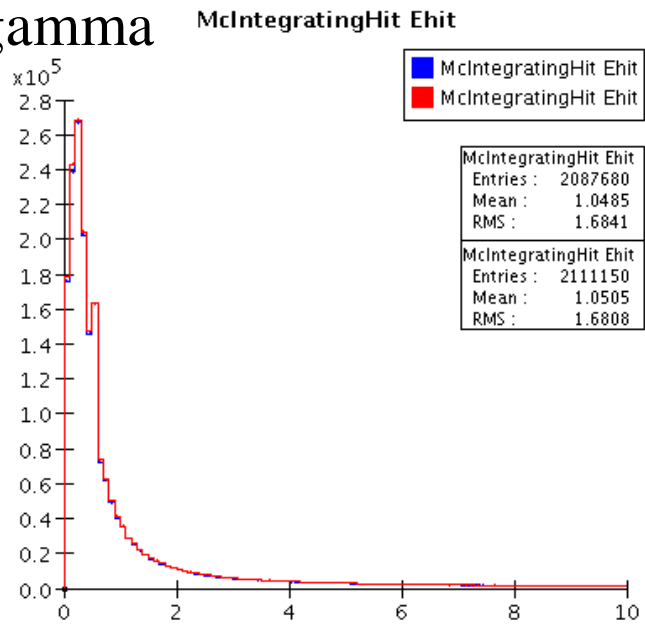


1 GeV proton

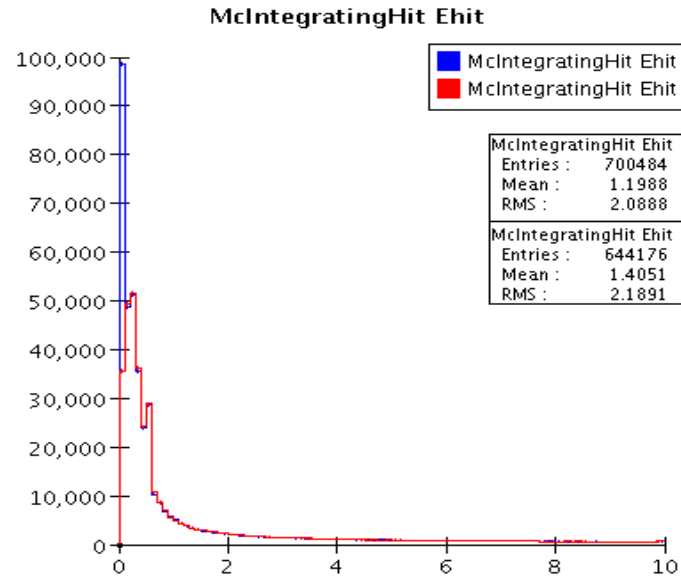


# Integrating Hits

1 GeV gamma



1 GeV proton



# More on Processing times

All Gamma run:

	v4r7	v5r0p1
Generator	293 min	75.3 min
Digitization	14.3 min	12.9 min
Reconstruction	434 min	85.8 min
Total	12.7 hour	185 min

What drives the processing time during reconstruction?