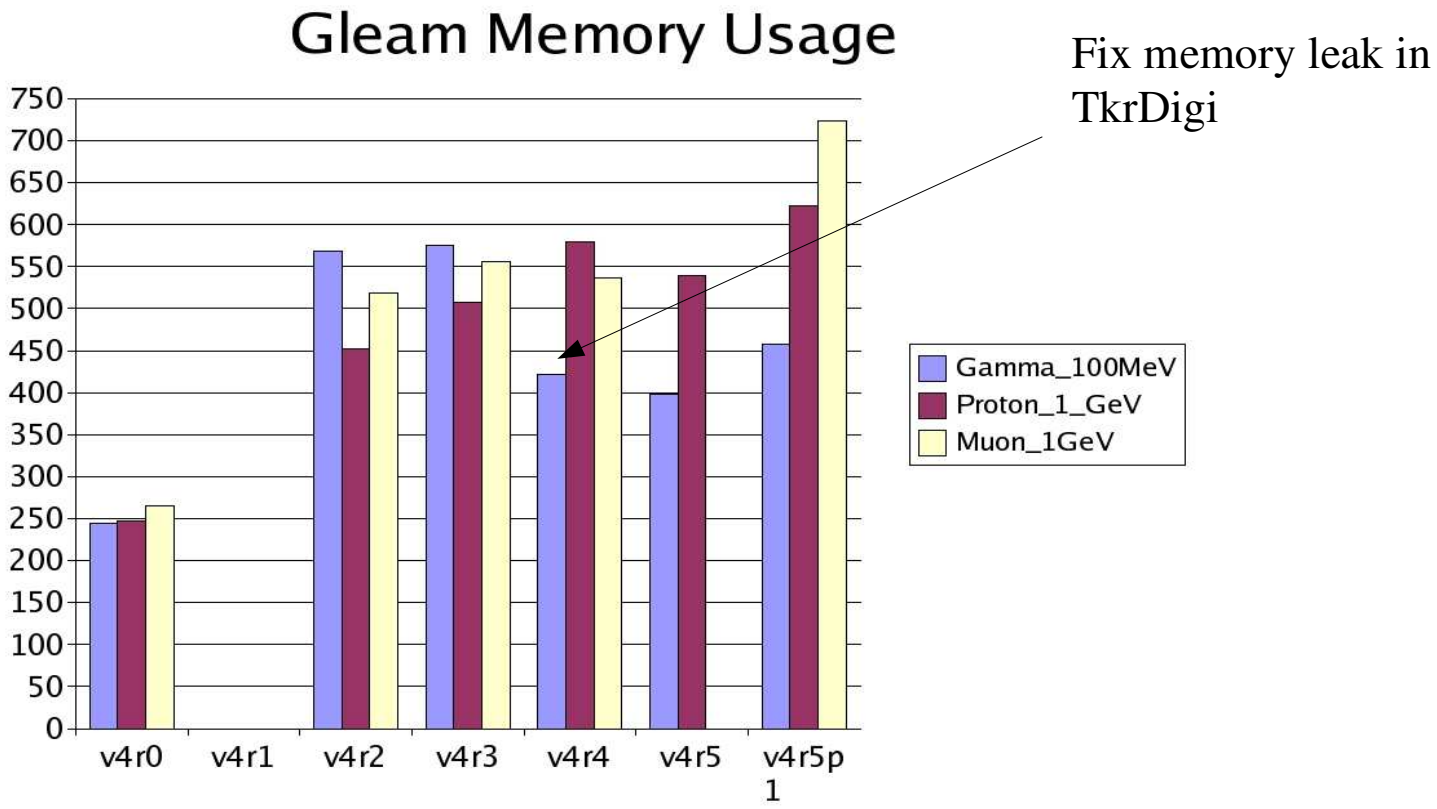
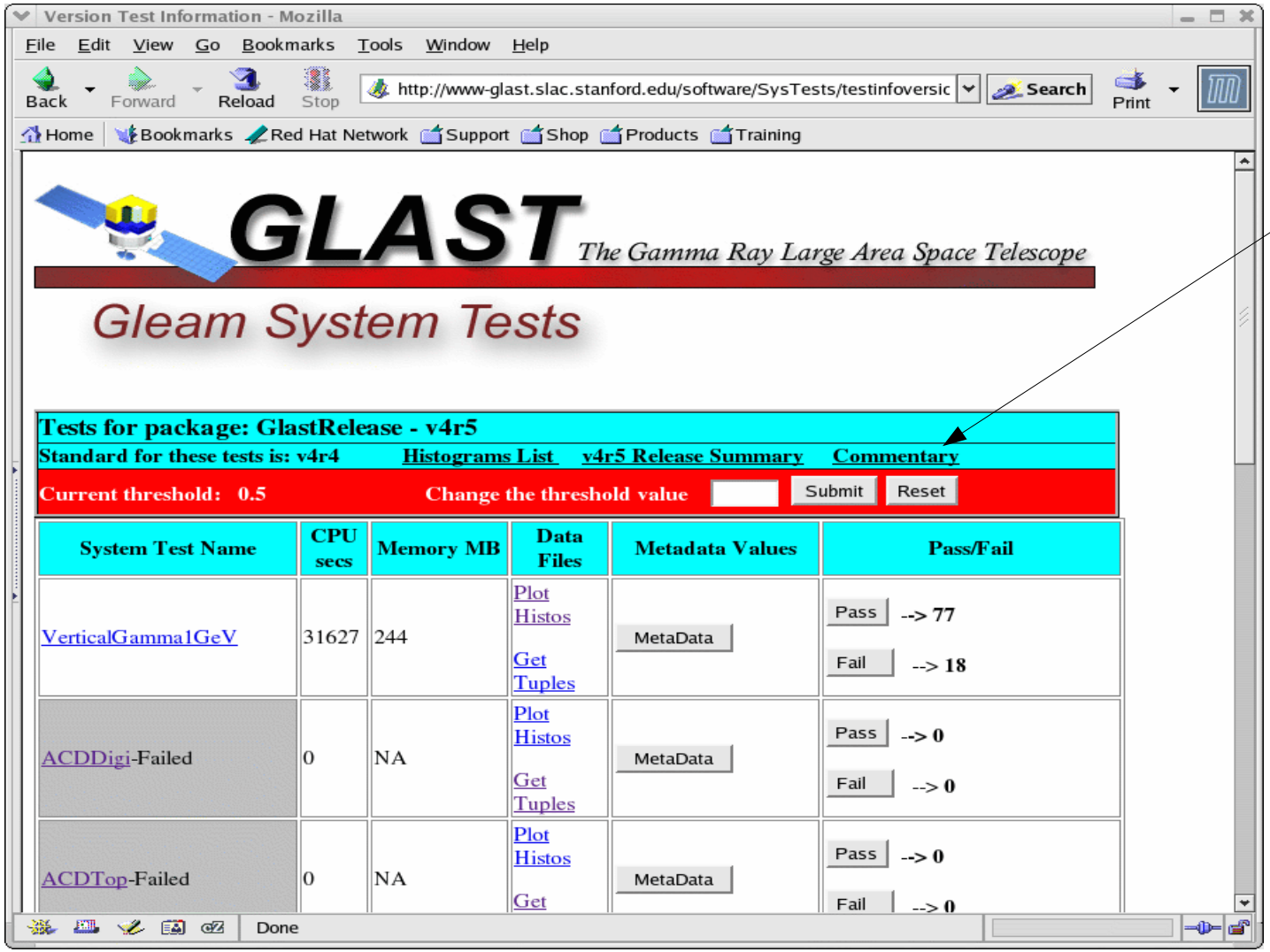
System Tests

Run for GlastRelease v4r5 and v4r5p1. The memory leak looks like it is still there...

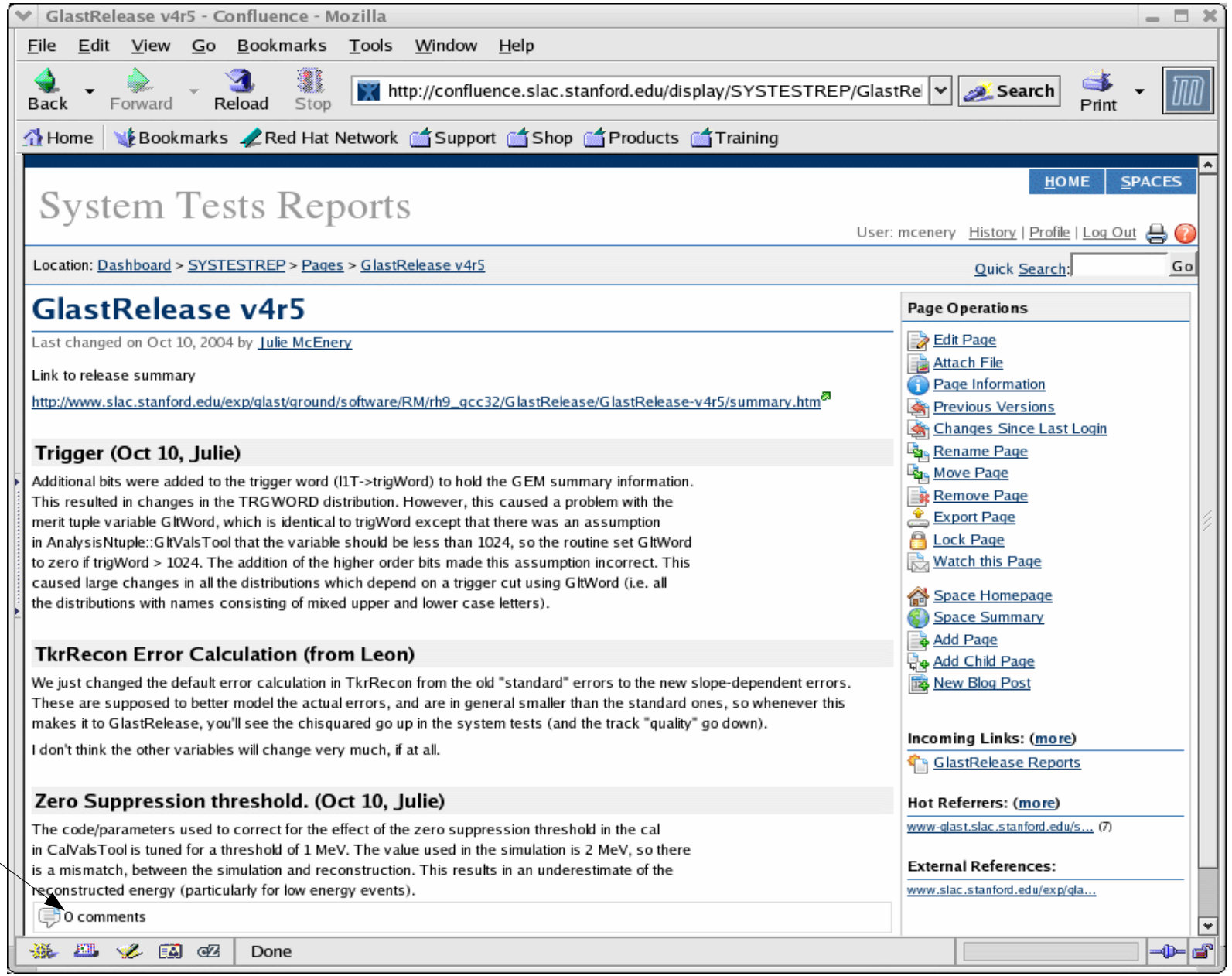


Documentation/Reports



Link to a confluence page (courtesy of Richard and Karen)

System Test Comments



What's this?

Other small pieces of progress...

Several new tests added to the EngineeringModel package, the jobOptions for these tests are controlled by I&T.

The Release Manager now automatically creates the config files for the system tests (thanks to Navid). A workaround for the sporadic DB connection failures with redhat 9 was found (which uncovered a bug that took yet more time to find and fix...). We are now ready to automate the systests.

We have started to document the contents of the histograms:
http://confluence.slac.stanford.edu/display/SYSTESTREP/GlastRelease+Histogram+Definitions
Comments and suggestions are very welcome.

Received some code from Michael Kuss to check for event reproducability. This will shortly be implemented as a system test.

GlastRelease v4r5 and v4r5p1

There were two fairly major issues with v4r5.

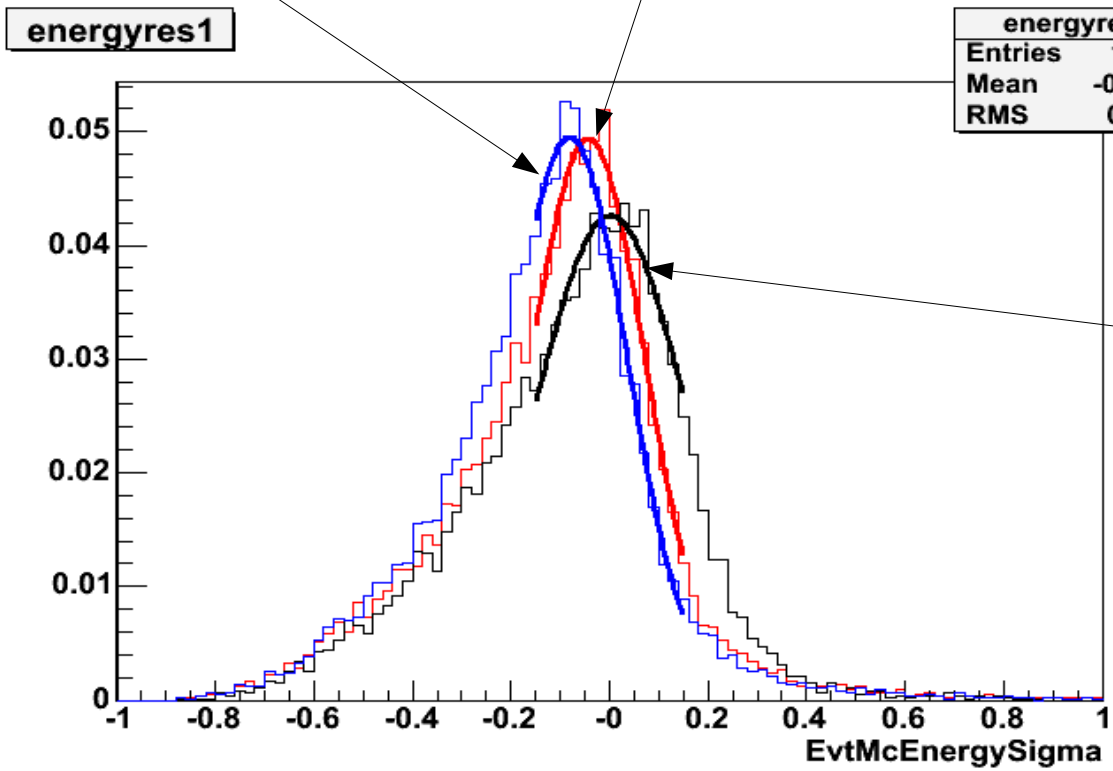
1) Some higher order bits were added to the trigger word, this caused problems because in AnalysisNtuple GltWord was set to zero if trigWord>1024.
2) There was a mismatch between assumed Cal zero suppression thresholds for CalValsTool, which was tuned for 1 MeV, and the digitisation which was set at 2 MeV.

Both of these issues were fixed for v4r5p1. The zero suppression threshold for the Cal digitisation was reduced to 1 MeV.

Energy Resolution – 100 MeV Vertical Gammas

v4r4, new CalValsTool
2 MeV threshold
peak at -0.05

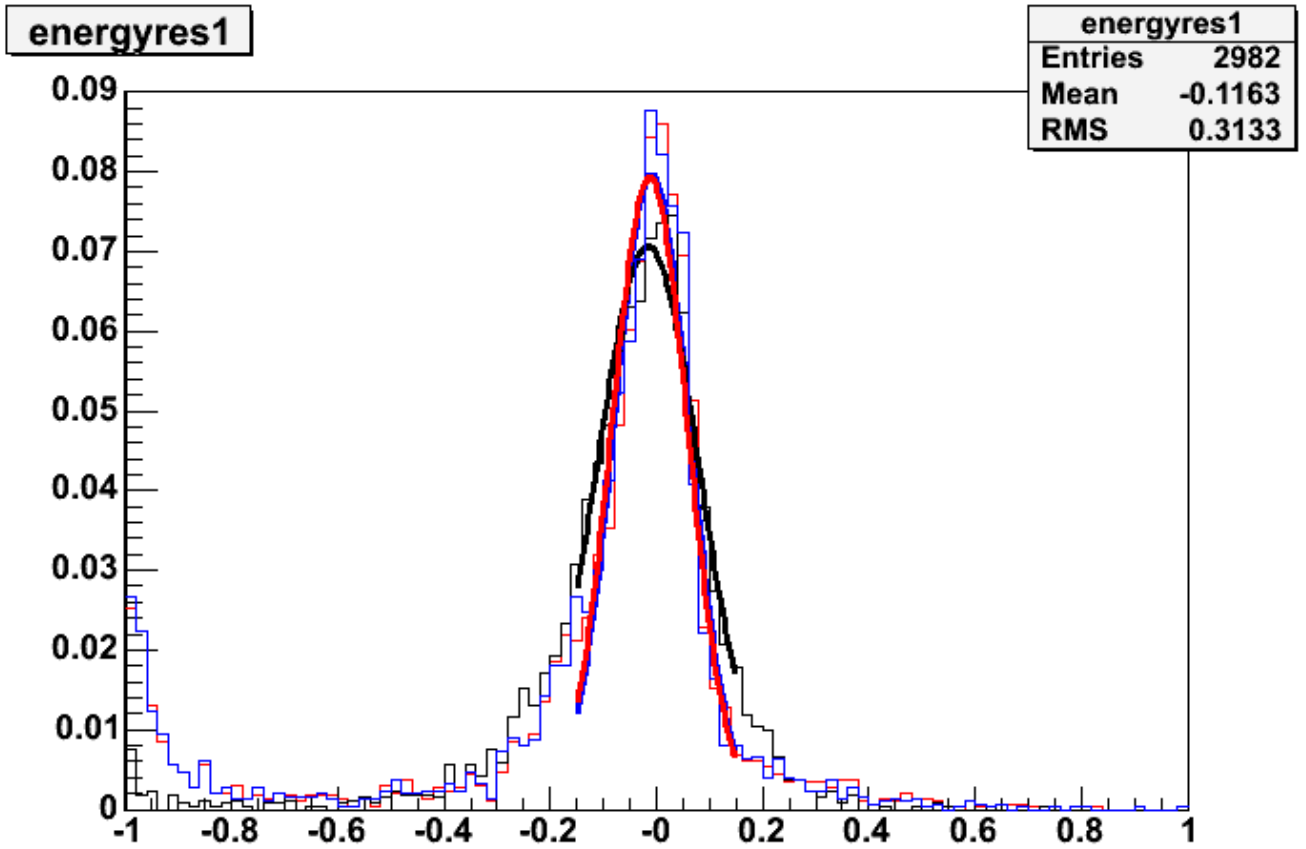
v4r5p1, new CalValsTool
1 MeV threshold
peak at -0.008



v4r2, old CalValsTool
2 MeV threshold.
peak at 0.002

- Normalized distributions of EvtMcEnergySigma after DC1 cuts have been applied.
- Fit a Gaussian between -0.1 and 0.1 to find the peak of each distribution.
- New CalValsTool seems to provide better energy resolution, even with a change to a 1 MeV threshold the distribution may not peak at quite the right energy.

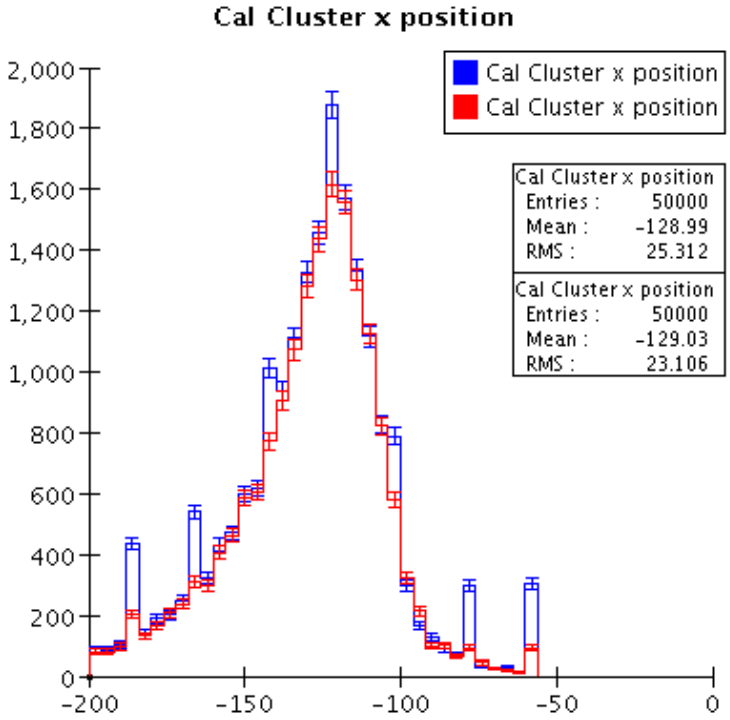
Energy Resolution – 10 GeV Vertical Gammas



- The zero suppression threshold (and the correction for it) is not so important at higher energies.
- This is about as much as the systests can tell about the effect of the change in threshold, as there are not enough statistics in the AllGamma run to really allow one to explore lower energies and a range of inclination angles.

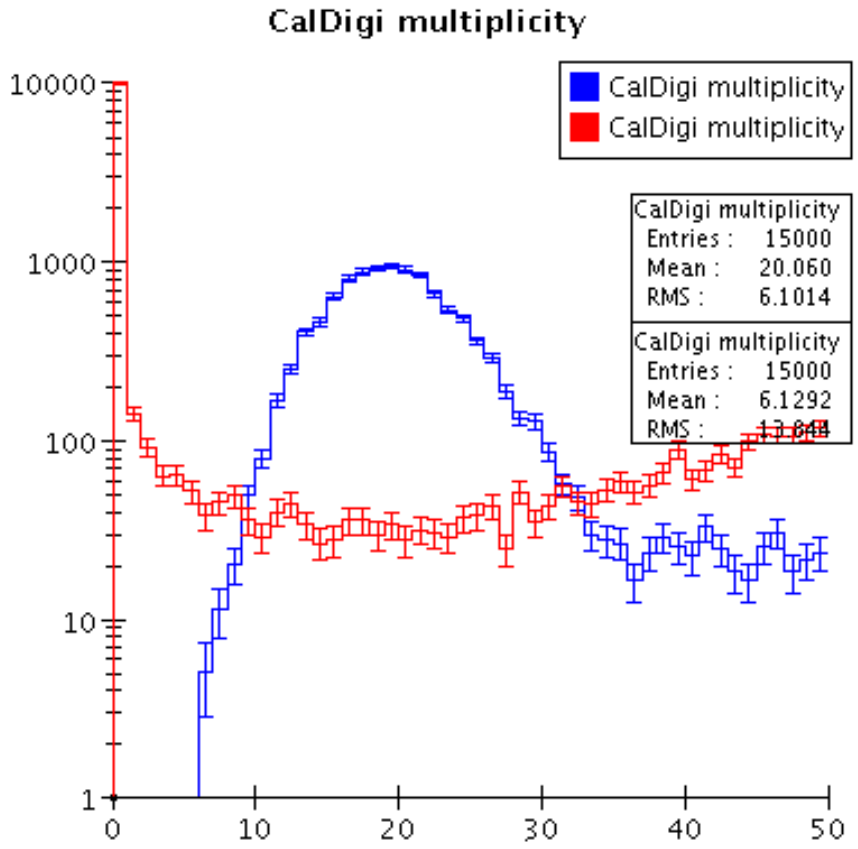
CalDigi Distributions

Almost all of the CalDigi distributions inv4r5p1 are different from the standard (v4r4) due to the change in zero suppression threshold.



This is the Cal Cluster Z position for vertical 1 GeV gammas.
(the systests plot is mis-labeled).
What are the peaks caused by? and why do they become more pronounced for the 1 MeV threshold (in blue)?

More CalDigi Distributions



This is the number of hit xtals for the 2 MeV threshold (red) and the 1 MeV threshold. (lots more noise hits!).

Some Issues

The system tests really should be run using optimised builds of the code. This would also allow the generation of larger AllGamma and BackGndAvg datasets with each systest run.

The release manager is not building optimised builds, the optimised version of the external libraries is not kept up to date. Which presumably reflects the fact that we have been mostly developing rather than using the code recently. With DC2 approaching, this will change...

Are we happy with the way things stand with energy reconstruction and supression threshold in v4r5p1? Many of the issues will be sorted out with the revamp to CalRecon, but what do we do in the meantime?