

GlastRelease v15r42

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System Tests Report Summary

Many differences for the comparison with the previous release, [GR v15r40](#), despite relatively harmless looking code differences. The conclusion is that these are either directly due to the ACD geometry change or indirectly caused by the resulting differences in the details of the simulated physics interactions.

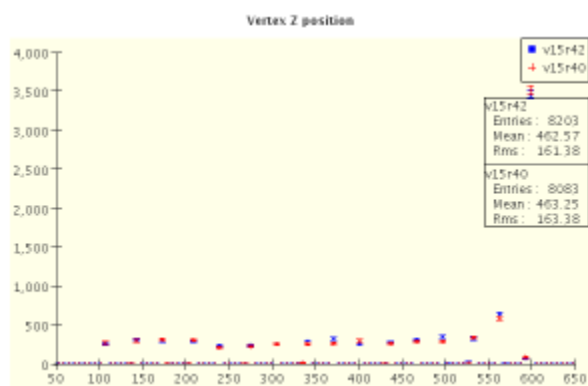
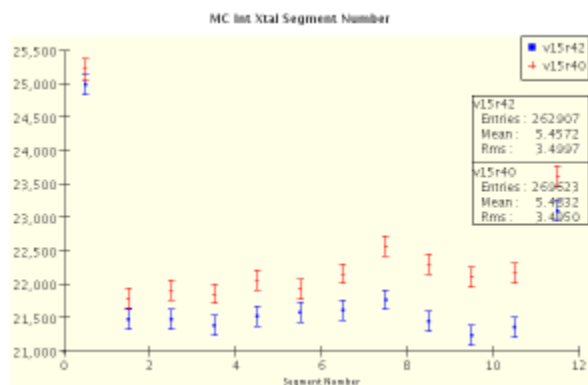
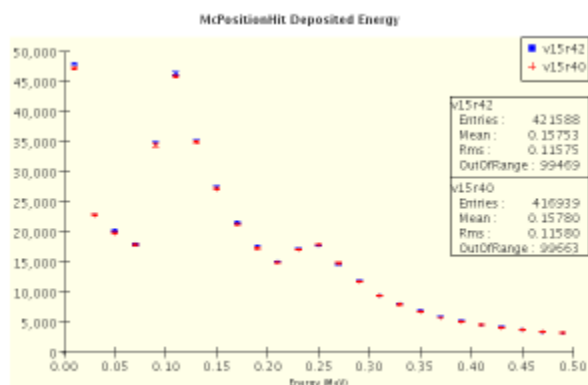
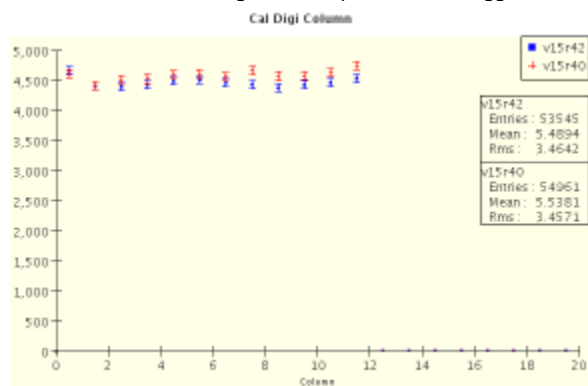
Changes

- xmlGeoDbs - ACD trapezoids are back in.
- Gleam - JO update for alignment
- AncillaryDataUtil, EbfWriter, CalDigi, GlastSvc, HepRepXml, LdfConverter, rdbModel, rootTestData, userAlg, xmlUtil, TkrDigi, TkrUtil - env variable changes related to CMT - SCONs switch.
- xmlBase v5r5p1, CalibData, CalibSvc v0r40, calibUtil - related to ACD calibrations (these won't affect the MC system tests)
- GlastClassify - variable fix (also no effect on system tests)

Reasons I am not too concerned

1. We expect the ACD distributions to shuffle due to the change in tile shape. The POCAs are always sensitive to this.
2. The filter energy diff plot is also affected by the ACD geometry through event selection and changes to the CAL energy due to differences in propagation, but should be small and not show a trend for the gammas (it doesn't).
3. You can tell that the physic details of the simulated events have changed because the MC integrating hits and integrating positions have changed even though the primary populations are identical. Calibrations could cause this, but we don't change those for the MC system tests (uses ideal).
4. I checked a series of correlations for a variety of CAL energy and TKR recon variables between v15r42 and v15r40 and these showed tame scatter with no systematic trends.
5. The only significant difference might be the drop in the CAL column and CAL tower plots for the background test (also some trend in this with column number), but this can be affected by the side tiles and is most noticeable for the tests that are more sensitive to side tiles (non-vertical, background, or gamma energies where backslash becomes important).
6. Also the CAL trans rms plot is flagged for the muons, but it is not a very significant difference and does not really shift the peak.

Here are some of the background test plots that are flagged:



For the AllGamma test some similar plots are flagged, but the changes are small.

The cal cluster trans rms is flagged for muons, but not a very significant change.

