# Comparison of GR1.615 and 1.616

- GR1.616 is old version of CalXtalResponse, CalDigi and Trigger

- Noise and LAC updated

- GR1.615 is new versions of CalXtalResponse, CalDigi and Trigger

- Test Method:
  - Simulate upward-going pencil beam of muons starting in center of top CAL layer xtal 6 (x=200, y=200, z=-60)
  - One and only one hit produced in calorimeter
  - TKR track and trigger always generated
  - Add code to CalDigi to :
    - Set hit energy to E=exp(0.01*EventID) MeV
    - Save test output of CalDigi (adc, lac, fle, fhe, range) in ASCII file
  - Generate 1200 events => 1 MeV to 100 GeV with 1% steps
  - Plot quantities merit tuple and saved output

CalELayer0-Einjected, GlastRelease 1.616


CalELayer0-Einjected, GlastRelease 1.615
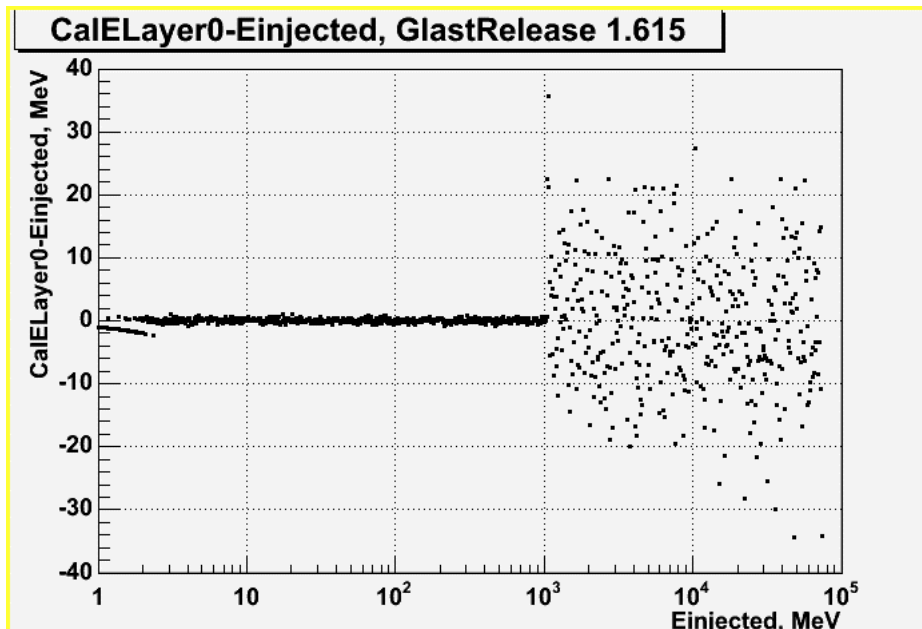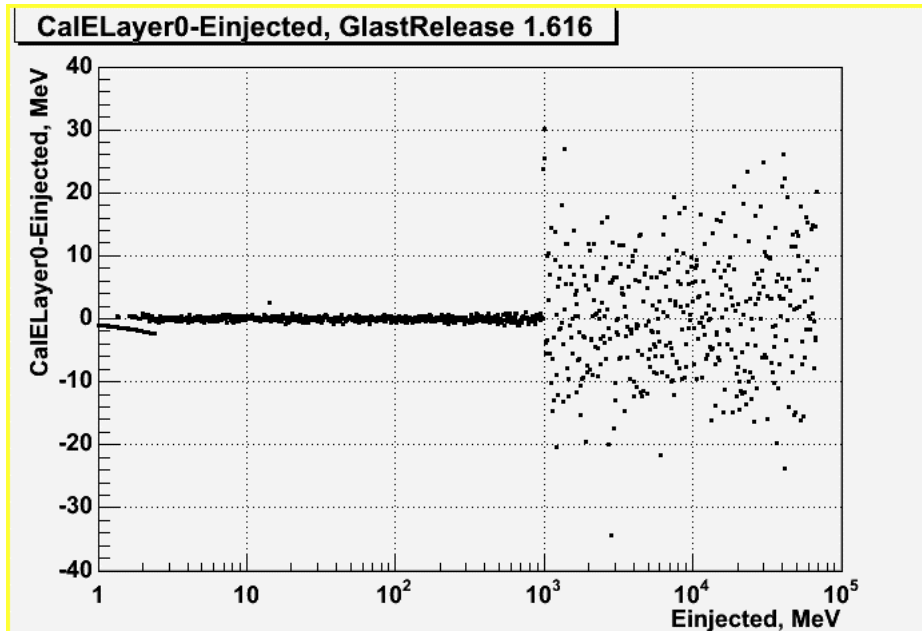
- Mean difference between injected and recon energy is zero in both cases

- Feature at low E is below Lac

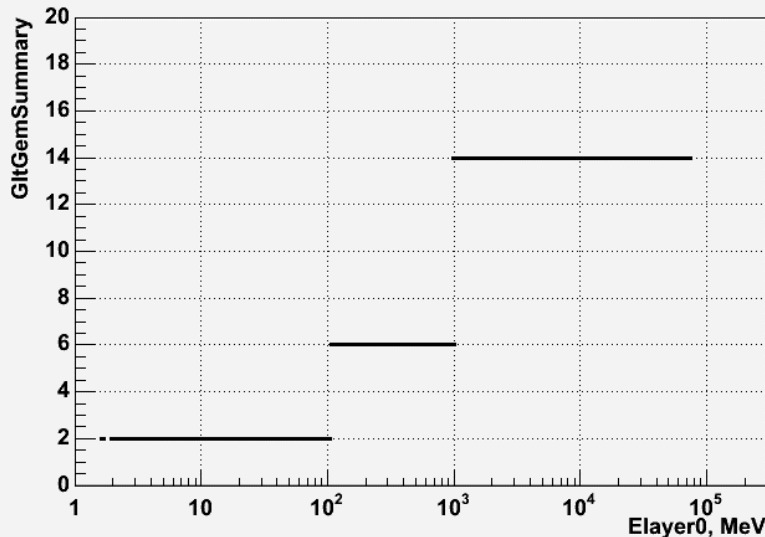- Increased spread above 1GeV is small diode
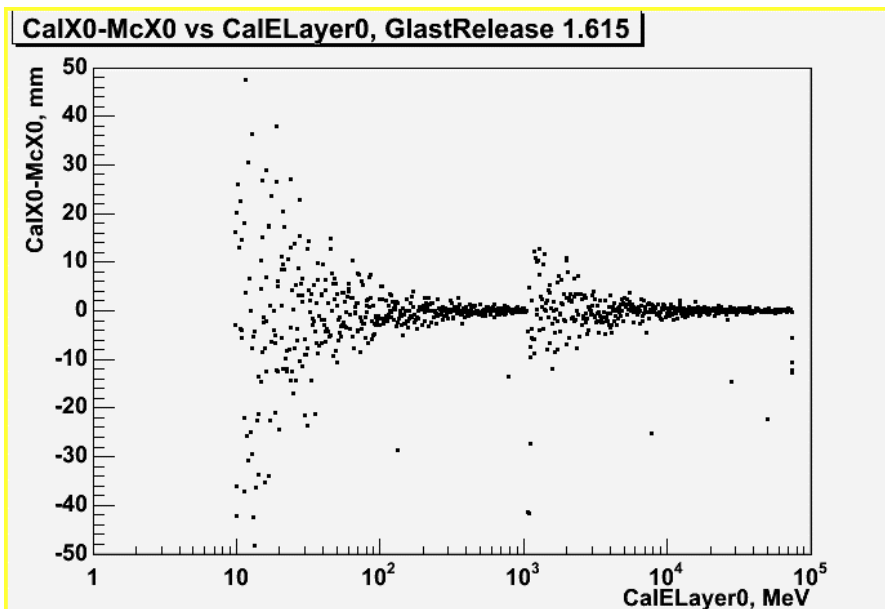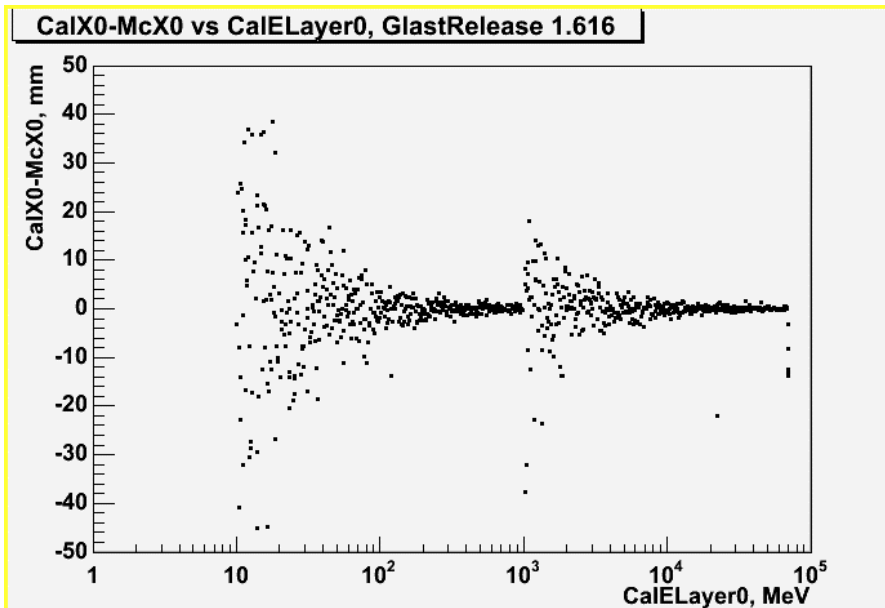
- Mean difference in simulated and reconstructed position is zero in both cases

- Spread is virtually identical in each version

- Spread is defined by signal to noise ratio

GltGemSummary vs ELayer0, for GlastRelease 1.616
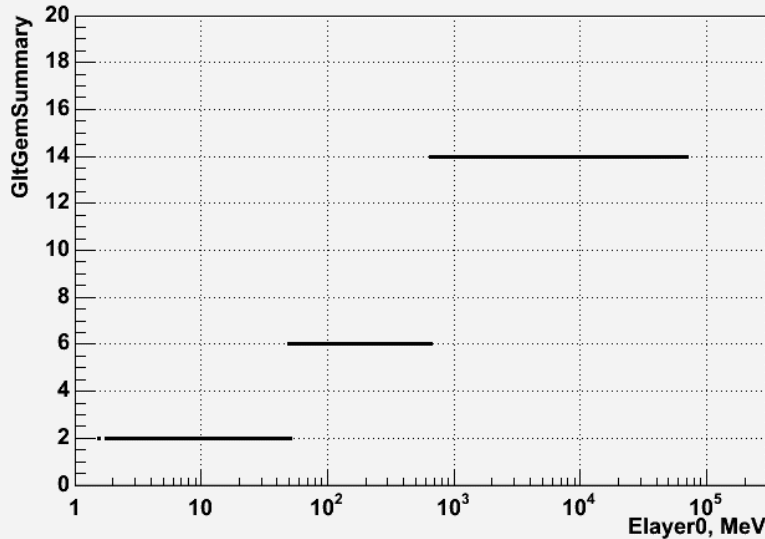
GltGemSummary vs ELayer0, for GlastRelease 1.615

- Value of bit in GEM summary word
  - 2 is TKR trig
  - 4 is CAL lo
  - 8 is CAL hi
- CAL lo, hi Thresholds are at the right places in new version, too small in old version

Conclusion

- CalDigi+CalRecon works properly in both GR 1.616 and GR 1.615
- The differences between these versions are related to different calibration parameters
  - FLE and FHE thresholds
  - ULD thresholds (not shown in this presentation)
- No bug found in CalXtalResponse