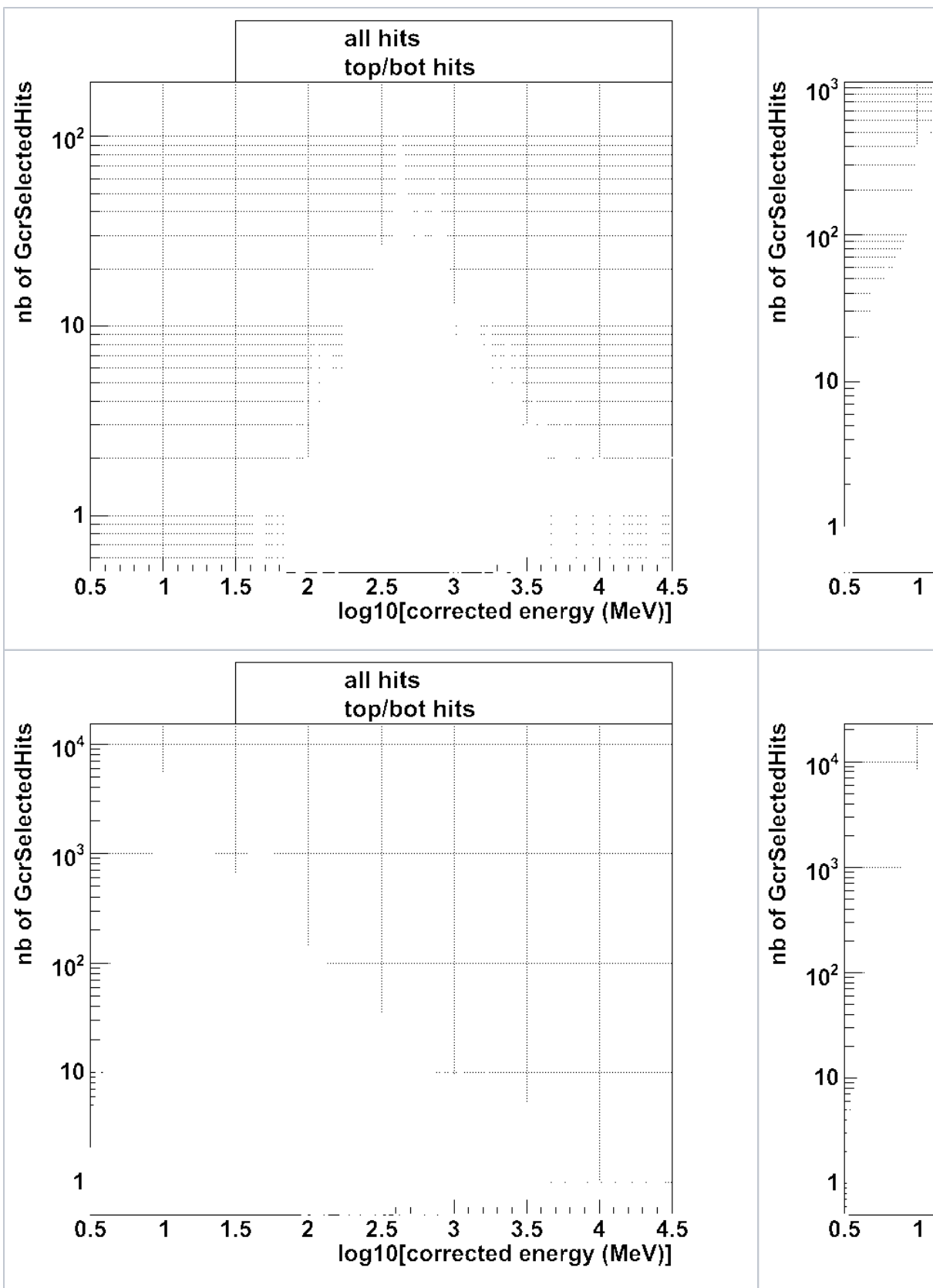


# 20 May 08 GCR Meeting Notes

- NRL
  - Proton/Interrange
    - Mevperdac
    - Current cuts pretty restrictive - may want to relax
    - Set initial threshold for interrange events at ~200 MeV (actually set at 20% of LEX1 sat.)
  - Asym
    - Same 4-range data as Mevperdac
    - Need to check code for range, order assumptions
  - Ped and Intnonlin
    - Most corrections applied for BT but not LAT
      - Ped temperature corrections
        - BT only right now
        - Not in offline calib data system; Uses JO/text file
        - Monitor requirement early in flight
      - Cross Diode Crosstalk
        - Code ready for LAT
      - Neighboring XTAL Crosstalk
        - Important for bkgd rejection
        - BT only right now
        - Not in offline calib data system; Uses JO/text file
        - Code in GR; plan to continue using JO/text file
        - Zach discussion with Anders re inclusion in pipeline
      - Linear DAC scale correction
        - Code ready for LAT
  - GCR peak energy
    - Andrey working on this by pulling MC truth out of G4 directly
    - GCR.root data used to select appropriate events
  - Zach Status
    - currently integrating BT xtalk corrections into LAT flight calibrations & recon
      - cross-diode crosstalk calculated, needs validation
      - neighboring xtal cross talk next
    - threshold monitoring works, but needs a little smarter fitting
- LPTA
  - Latest DGN and MIP filter results:

The latest version of the GCRCalib package was included in GR and successfully tested on a background-day sample. It is thus ready to go in L1 P2. The simulation of this background-day sample also included the MIP and DGN filters, that we had not managed to run in Lyon. As you can see from the plots below (from left to right, and top to bottom: HIP, GFC, DGN, MIP), the proton and He hit spectra look very nice. Brief reminder: these are the spectra of hits selected by GCRcalib, which has 2 steps as usual. First, the GCRRecon alg extrapolates the Tkr track to the CAL to find the logs crossed by the incoming particle and to compute the exact path-length of each track segment. Then, the GCRSelect alg considers all crossed hits which a substantial energy deposit (100 MeV for HIP, and GFC when trigger engine is 4 fired, 5 MeV for DGN and MIP, and GFC when trigger engine 4 is not fired), and selects those in low multiplicity layers (1 and only 1 set of adjacent hits, w/ 2 hits max) to get rid of nuclear interactions. This selection starts from the 1st CAL top layer, examines layers one after another, and stops if one layer does not fulfill the criterion. The "corrected" hit energy (plotted below) is the raw energy deposit converted into vertical equivalent energy using a simple path-length correction.

Note that it is hard to predict event rates from this simulation for the moment, since neither trigger engine nor filters were enabled. I am trying to get these rates by applying cuts based on GltGemEngine and GltPrescaleExpired (for the trigger part), and on the filters status bytes (ObfStatusBytes).



- Quenching progress
- LEO calibration sequence discussion
  - Latest rate estimates
  - Proton and 4-range requirements for mevperdac and asym
- Splinter meeting at launch?
- Other