• **Main goal:** improve background rejection in order to loosen other cuts and to gain some effective area

• **Strategy** (as proposed by Bill):
  1. use layer energy as a measure of path length in that layer
  2. use energy locations to fit a line
  3. test the algorithm on simulated muons
  4. turn to DC1 protons and tune the algorithm; lot of hand-scanning required (FRED)
  5. turn to DC1 $\gamma$s and tune again: how often (depending on the energy) will a $\gamma$ produce a MIP-like segment in the CAL (e.g. in $> 3$ layers) ?
  6. combine MIP-finder and clustering informations

• **Status:**
  1. GlastRelease v4r2 installed. Thanks to Benoît, we know how to run it and to analyse the output files (mc, digi, recon) using a RootTreeAnalysis macro
  2. RootTreeAnalysis and MeritTuple classes merged in one single ROOT macro to read simultaneously mc, digi, recon and merit variables for any event
3. turned to GlastRelease v4r6 since it’s compatible with FRED and contains CalRspSvc. Question here: weird pedestals now observed with Gleam v5r8 (not with v4r2) → some thresholding added
4. unlike CalRecon, which does not use the longitudinal position of deposited energy, we use the L/R asymmetry to measure the position

5. $\chi^2$ fit to a 3D line works well for simple events like muons:
6. some DC1 background files already transfered from SLAC ftp site to GAM

7. in view of proton scanning, Eric installed FRED and ran it on some DC1 events: ok, but some work is still needed, e.g. to understand the FRED option which creates a single xml file for a list of events

8. in December, Sylvain spent some time with Zach to learn mostly how to run UserAlg and read the CAL info (CalEnergyTool and CalPosTool)

**In progress:**

1. we are studying large angle muons hitting more than 1 crystal

2. first results for protons expected next week hopefully (FRED, macro, + basic clustering ?)

3. Eric and Michèle Bourgeat (2 days/week) are working on UserAlg, where the algorithm will be transfered soon. How to access the TDS info and how to use CalRspSvc is basically understood, current work is focused on : how to access the geometry and G4 propagator (to predict deposited energy and add this info in the $\chi^2$ of the fit), how to add a new variable to the merit ntuple