

Test run analysis

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Test run analysis

We never did a careful “analysis” i.e. looked at all aspects of the data

Another attempt before paper is published

- Better ECal calibration
- Derive uncertainty from calibration (should dominate)
- Alignment of ECal and SVT
- Angular distributions with the SVT
 - Need to understand Tracking efficiency

Not clear what is needed for the paper.

Today only show Ecal calibration stuff; tracking stuff for another meeting

Also: I only “really” look at top half here (bottom is just...there...)

ECal Calibration

Calibrate ecal gains based on E/p for each crystal

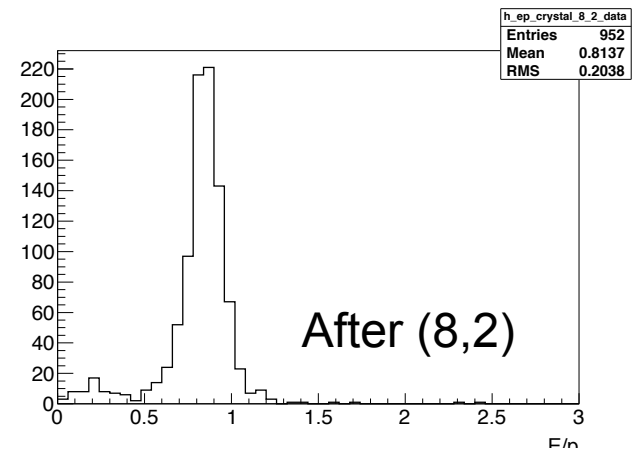
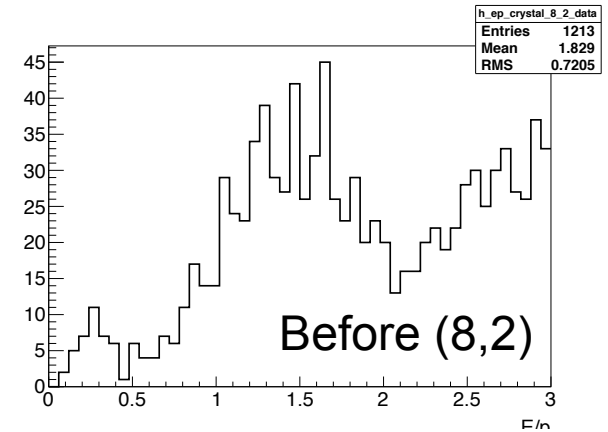
- Iterate and change gains to match E/p for data and MC
- Using all clusters (single hit clusters would be better, I think)

Manually

- No automation between iteration, 2-3 iterations feasible
- Existing automatic code doesn't work well – somebody should go back to this and do it properly. Perfect task for ECal group?

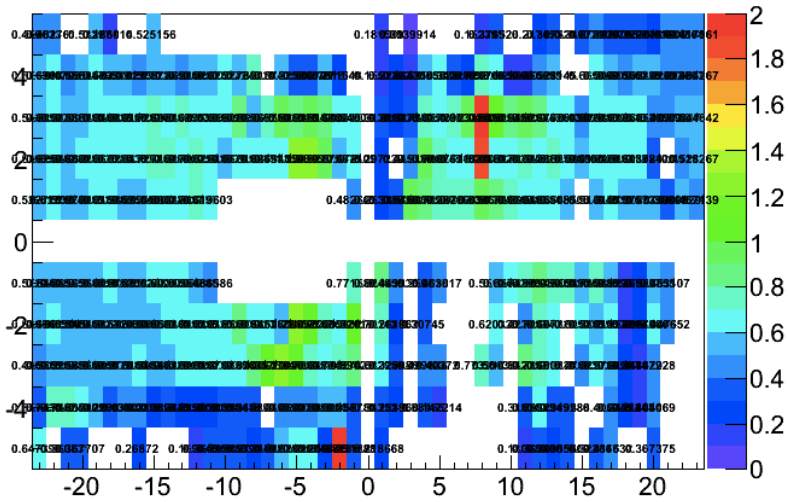
Issues

- Very low statistics in both data & MC (I'm using ~1/4 of the statistics here)
- Some crystals show reasonable E/p but x2 higher rate in data

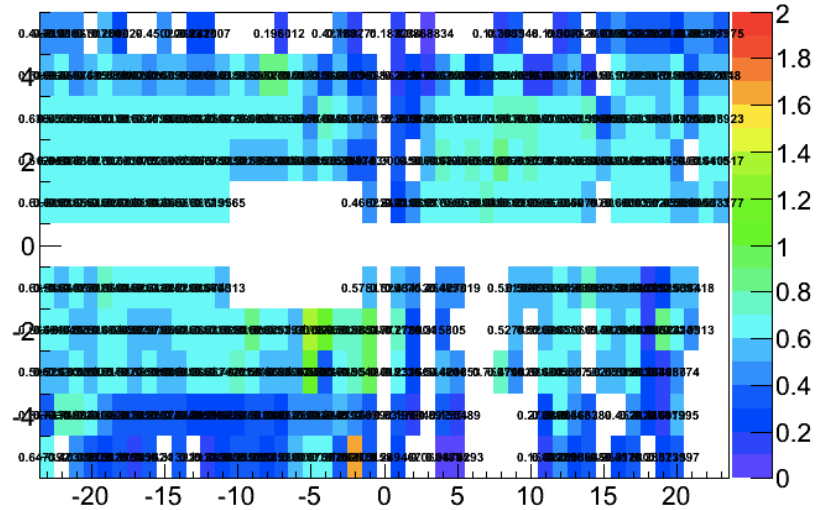


ECal E/p average

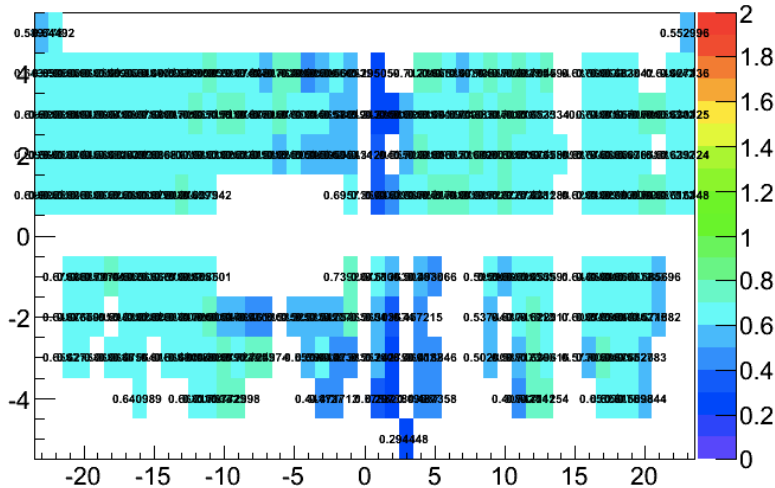
Data default



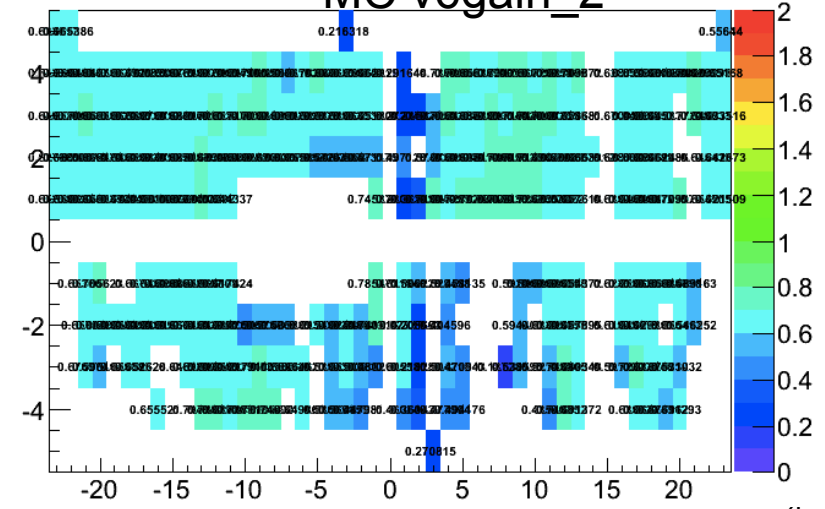
Data v6gain_2



MC default

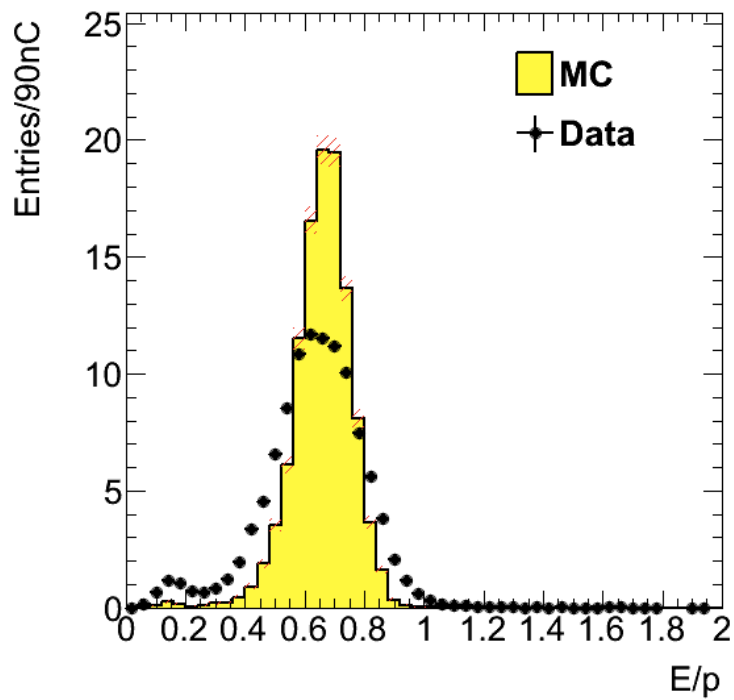


MC v6gain_2

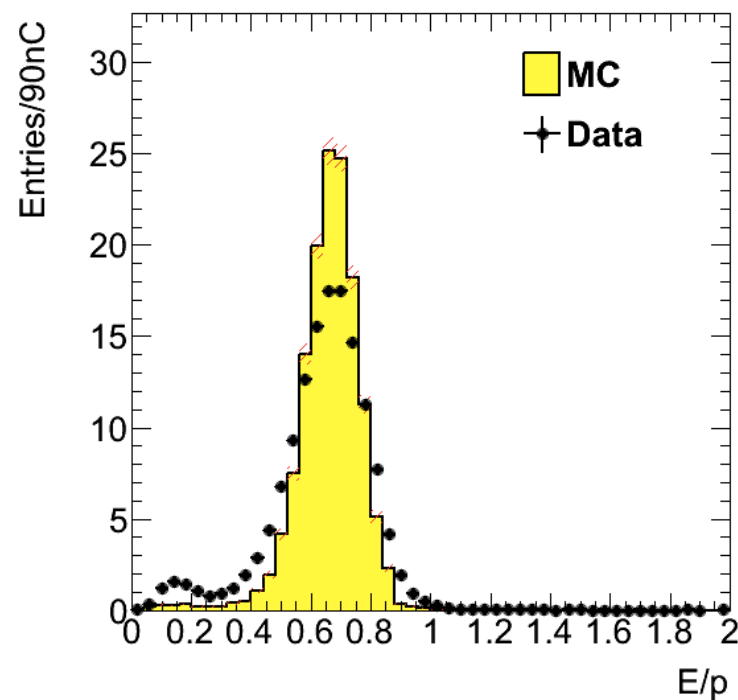


Ecal E/p Top Left Quadrant

Default

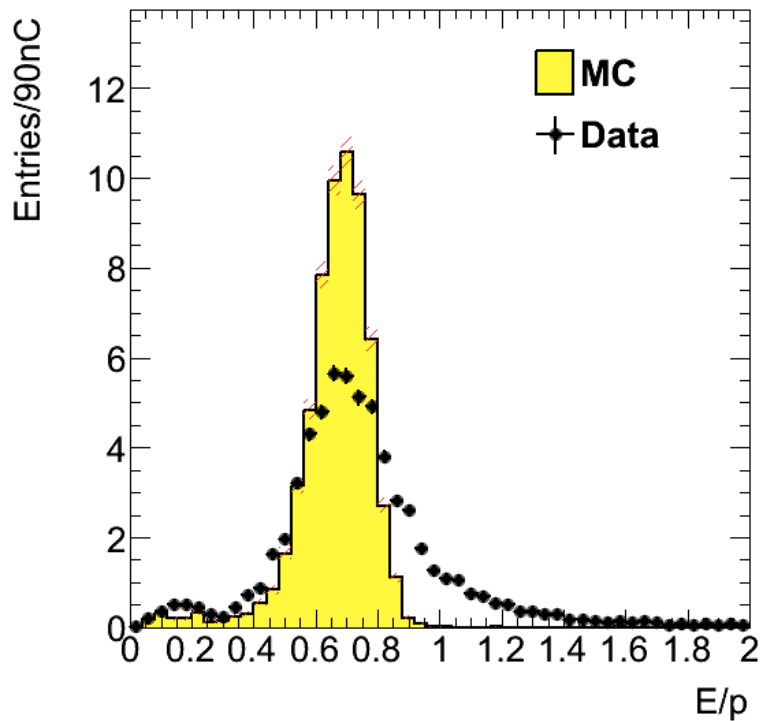


v6gain_2

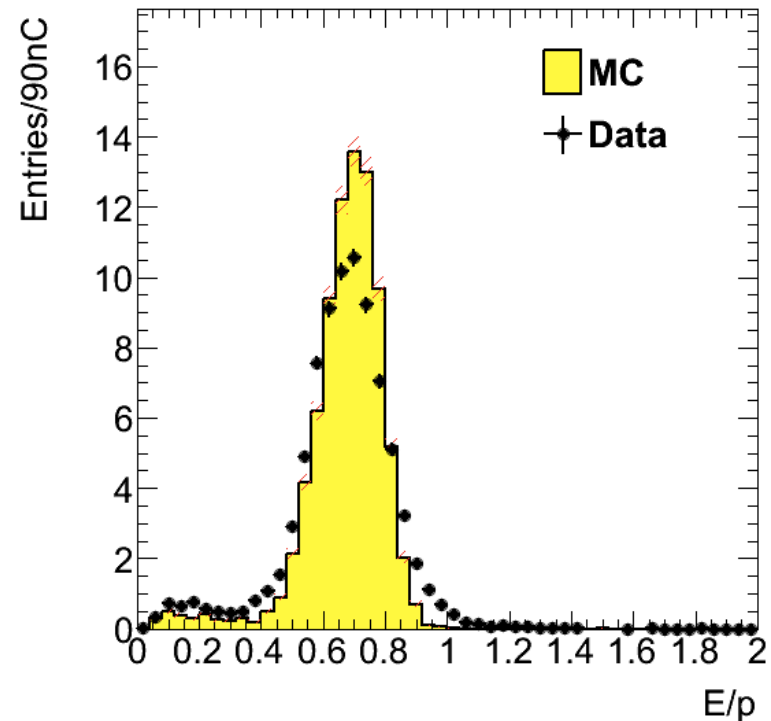


ECal E/p Top Right Quadrant

Default

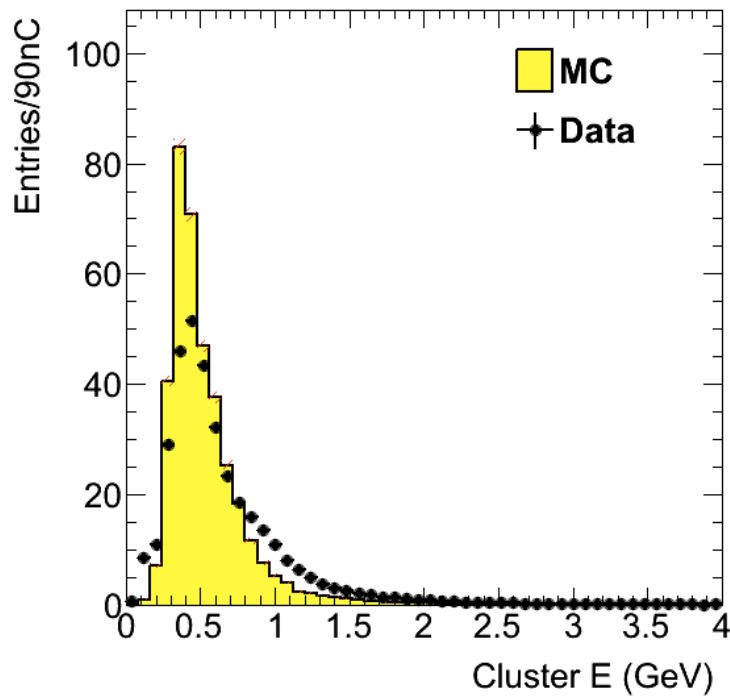


v6gain_2

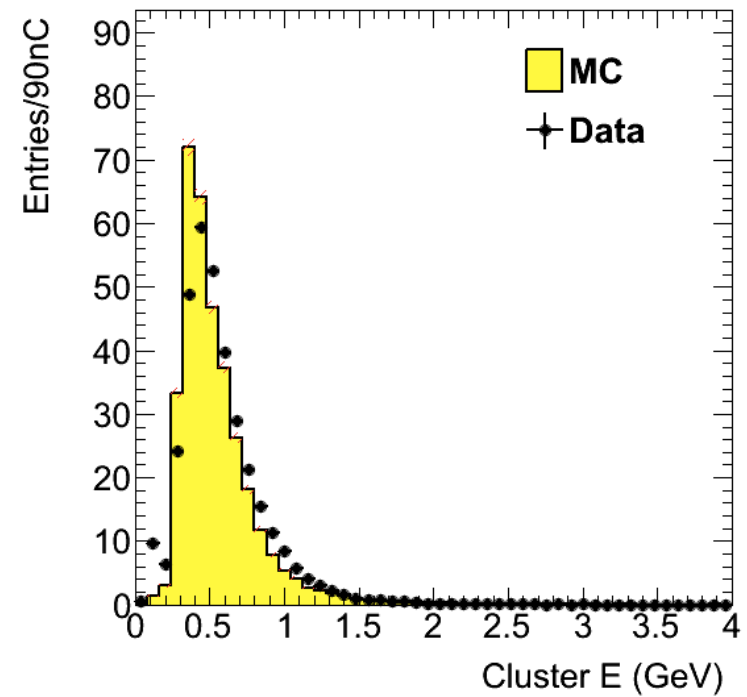


Ecal Cluster Energy Top Left Quadrant

Default

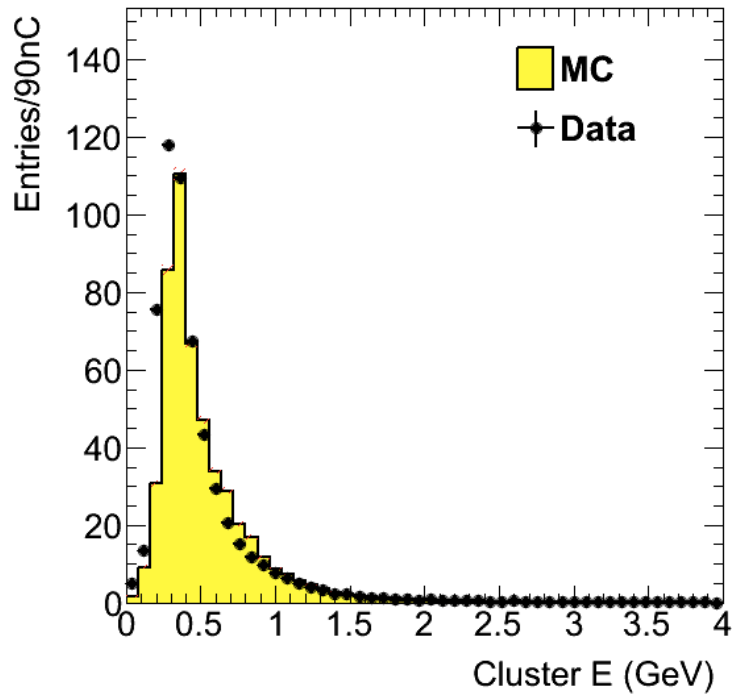


v6gain_2

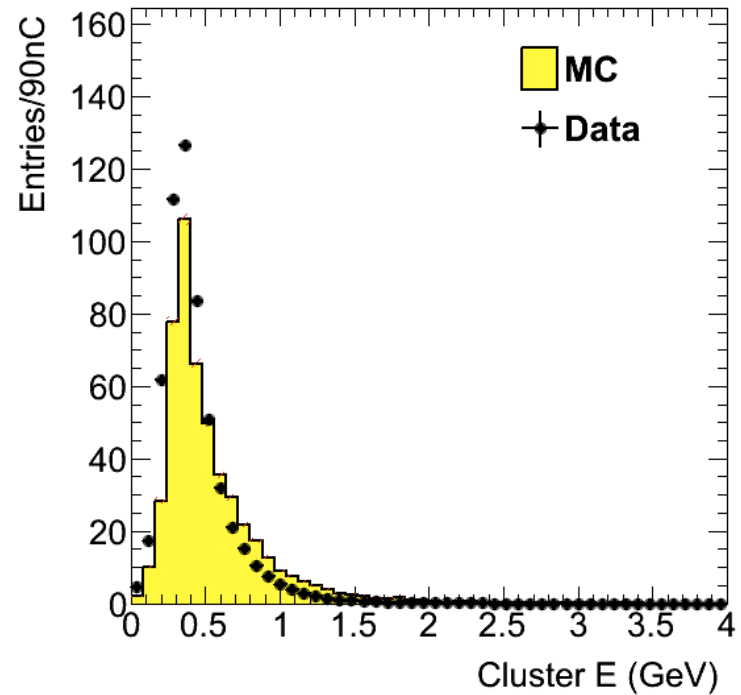


Ecal Cluster Energy Top Right Quadrant

Default



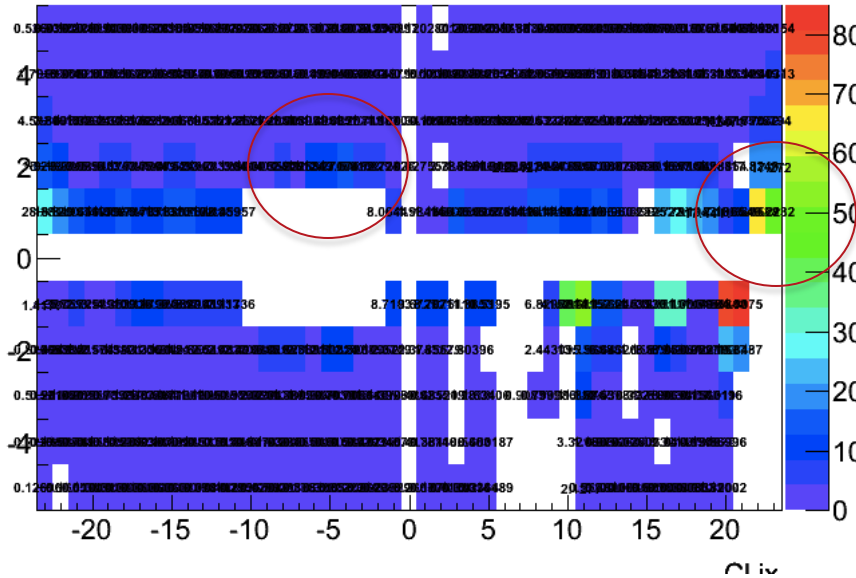
v6gain_2



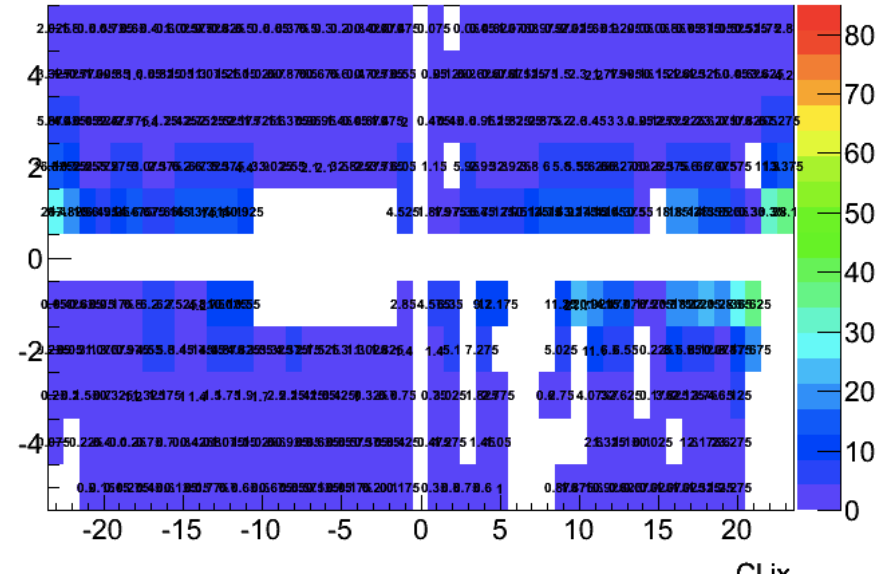
Ecal Normalized Count Rate (/90nC)

Discrepancy dominated by circled area.

Data

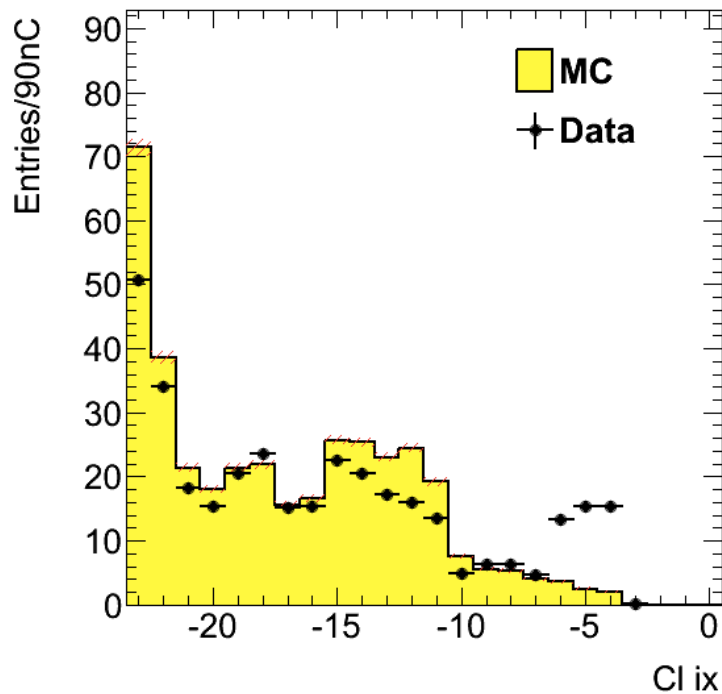


MC

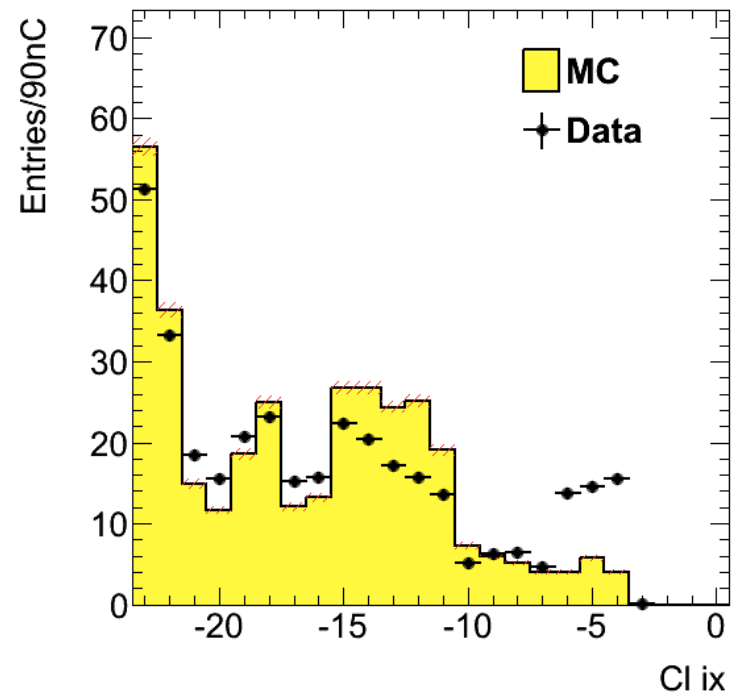


Ecal Cluster Position (X) Top Left Quadrant

Default

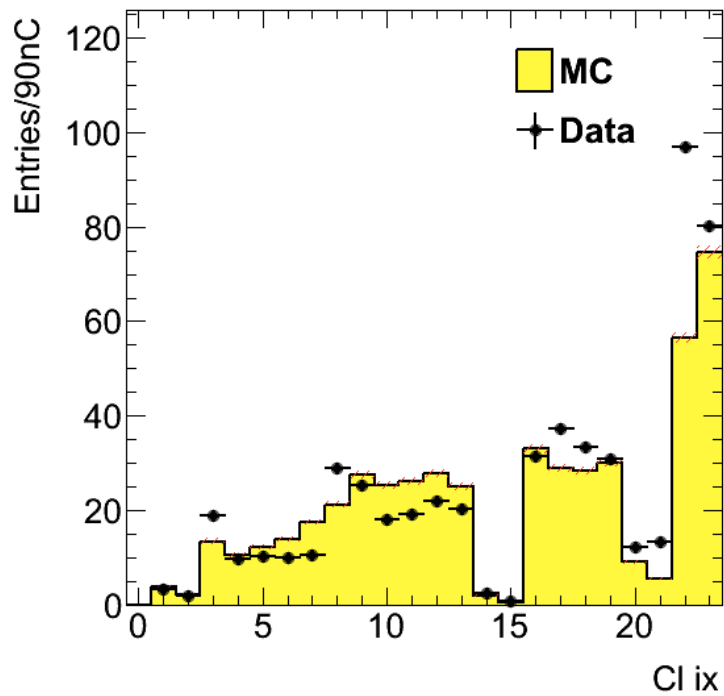


v6gain_2

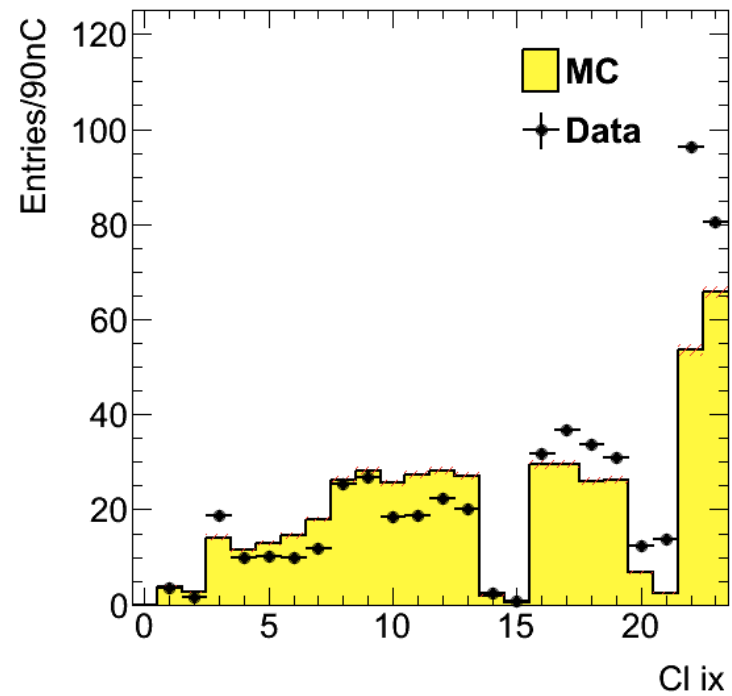


Ecal Cluster Position (X) Top Right Quadrant

Default

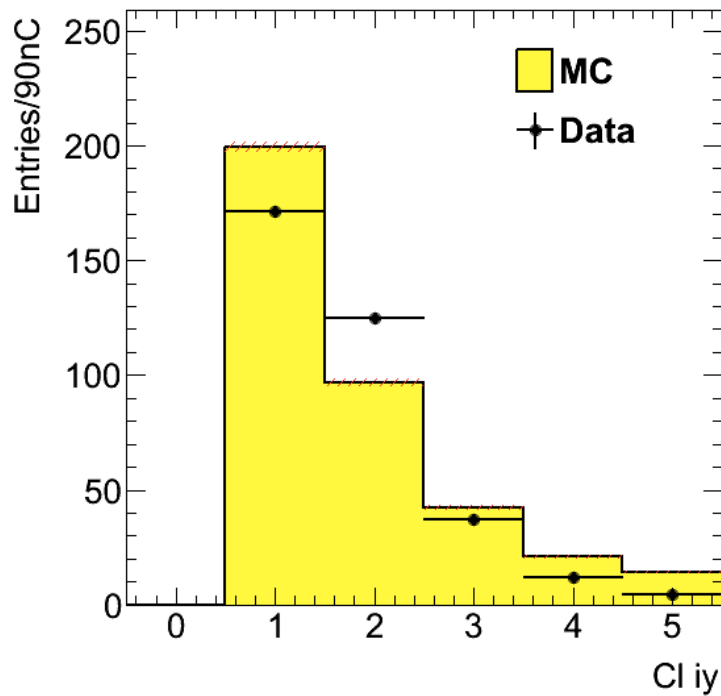


v6gain_2

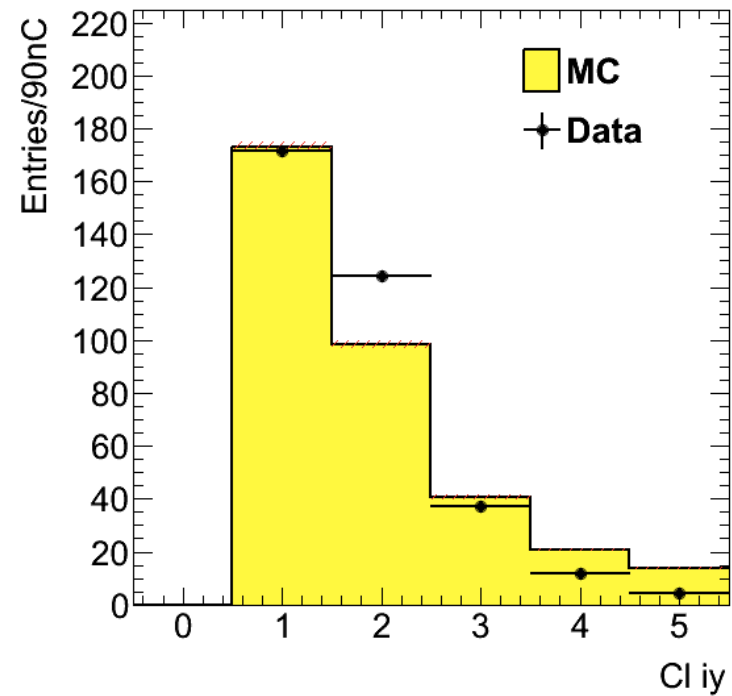


Ecal Cluster Position (Y) Top Left Quadrant

Default

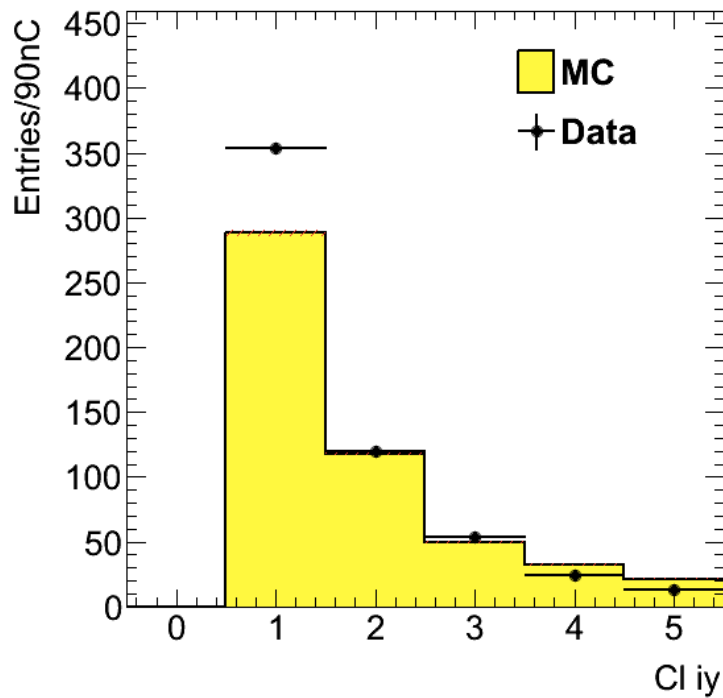


v6gain_2

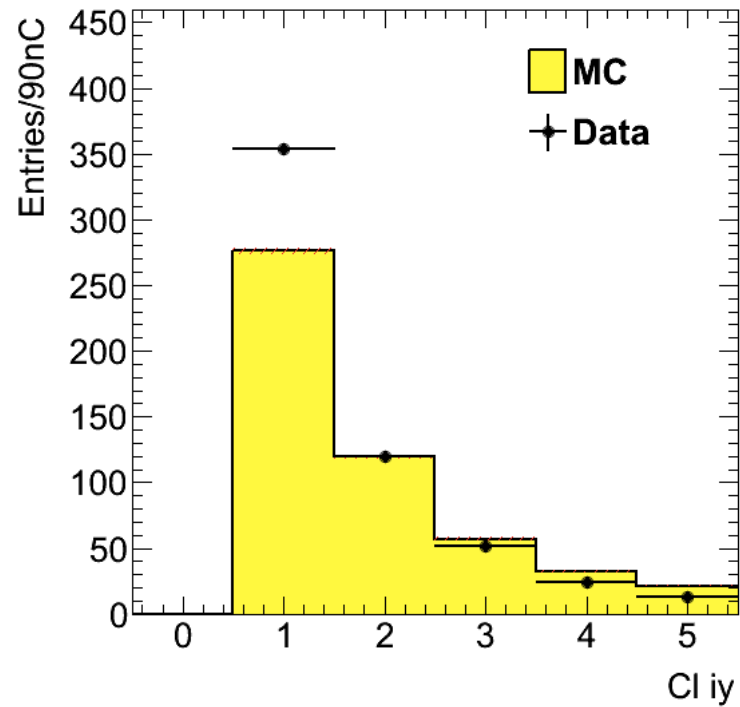


Ecal Cluster Position (Y) Top Right Quadrant

Default

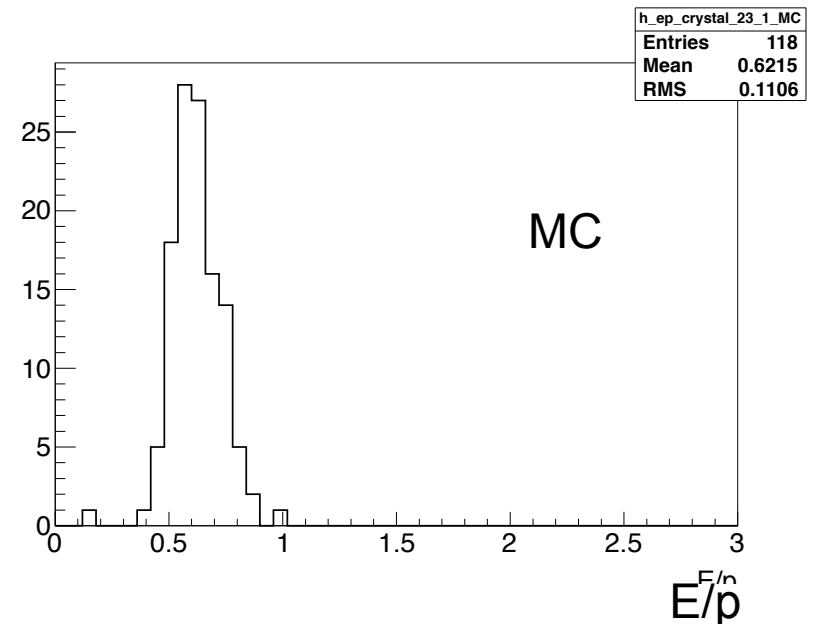
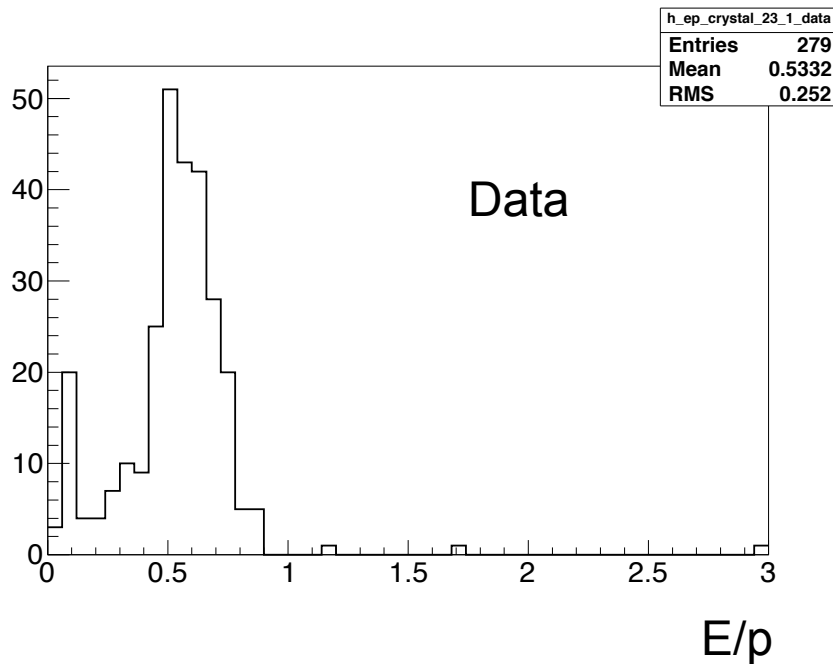


v6gain_2



Further improvements

Further iterations could (should?) improve things. But more stats and automation is required...



These are “nice” examples...

Manual Ecal gain calibration worked

- At least for some regions
- Others need more iterations and/or statistics (both data & MC)

Perhaps someone in the Ecal group can take this up?

- Best practice to get; and what the Test run is for (to some extent)
- We are not close to the limit of what we can do with this data...

Next steps for me

- Derive systematic based on calibration
- Decide if it's good enough for paper
- Work on tracking efficiency (next talk)