

Improved CFT thresholds

I have updated the CFT unpacker to use individual channel thresholds (rather than a global threshold)

Threshold values currently come from files generated for offline reco

- will eventually get them direct from database

Unpacker now needs download file containing cable map and thresholds

(only required for real data currently, but I would like to MC to work the same way to give a uniform interface: this will require changes to setup scripts for other tools, so not done yet)

New version of L3TCFTUnpack is head version in CVS; code to create new calib files is not yet available

Needs new CVS package...

Testing

Tested on real data from run 146562 (17 Feb)

Ran fine over 89,000 events (only stopped here because of a SAM problem)

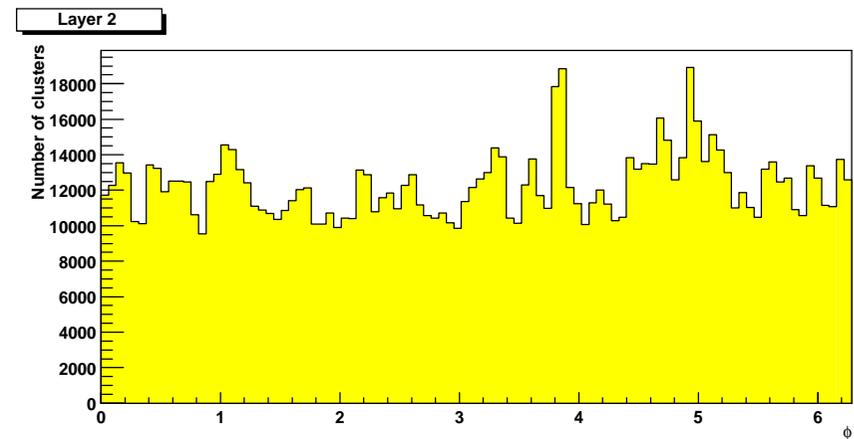
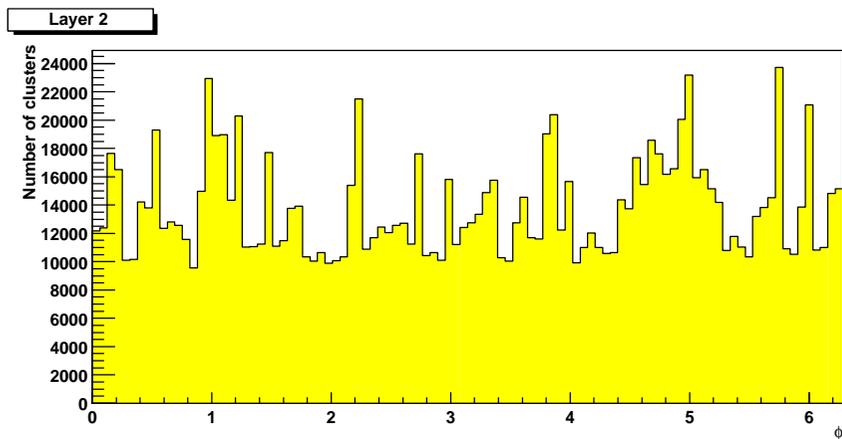
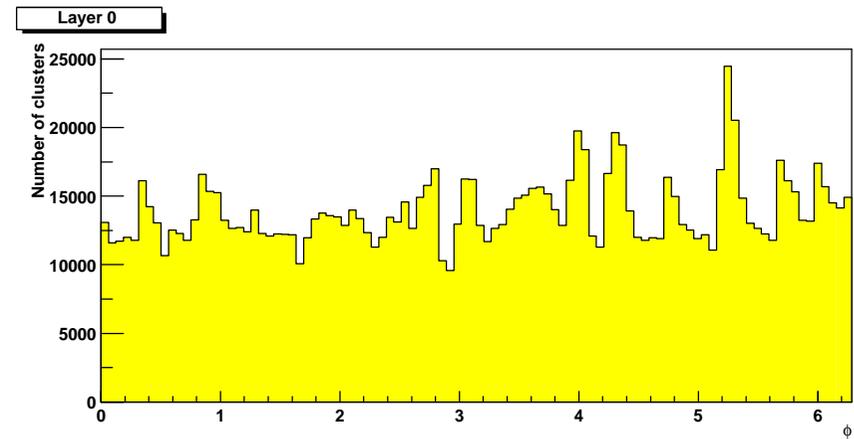
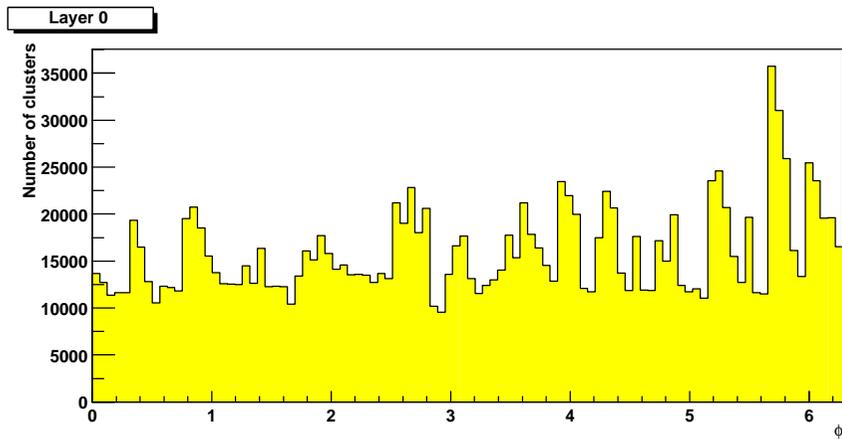
The following histograms are the axial cluster ϕ distribution for each layer from 10,000 events in this run, using a global threshold of 70 adc counts (“Old”) and the per-channel thresholds (“New”)

The new plots show have much more uniform distributions than the old ones, with a reduction in the number and height of the peaks

No account has been taken of anything else that might bias the distributions – i.e. trigger acceptance.

There still appear to be a number of features remaining – probably problems with the detector itself

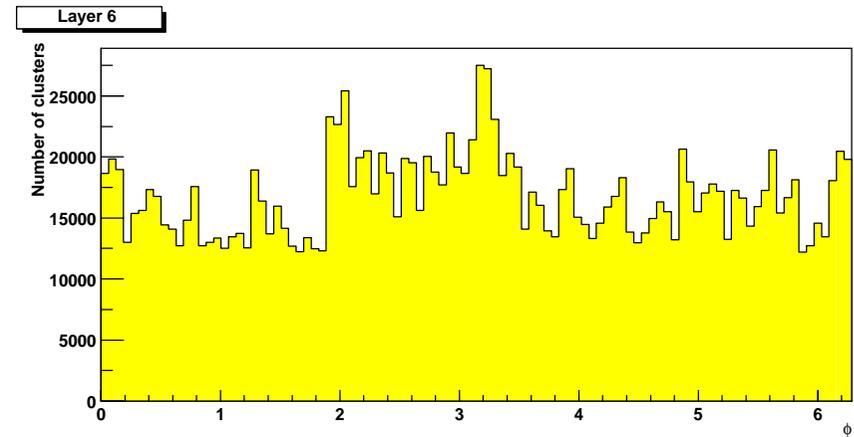
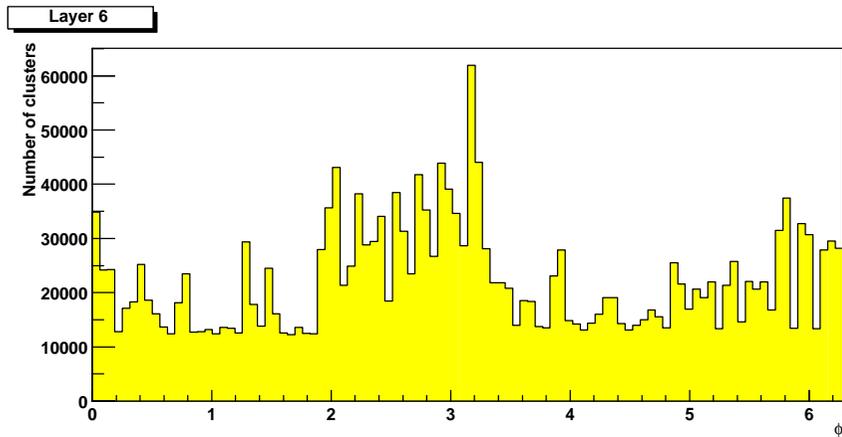
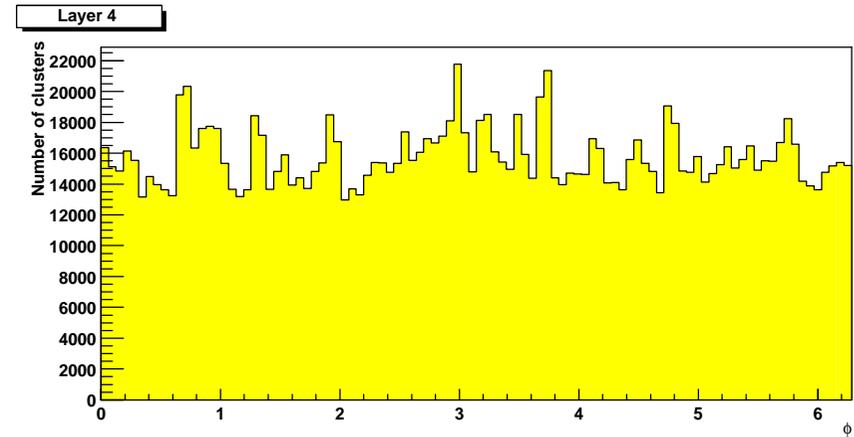
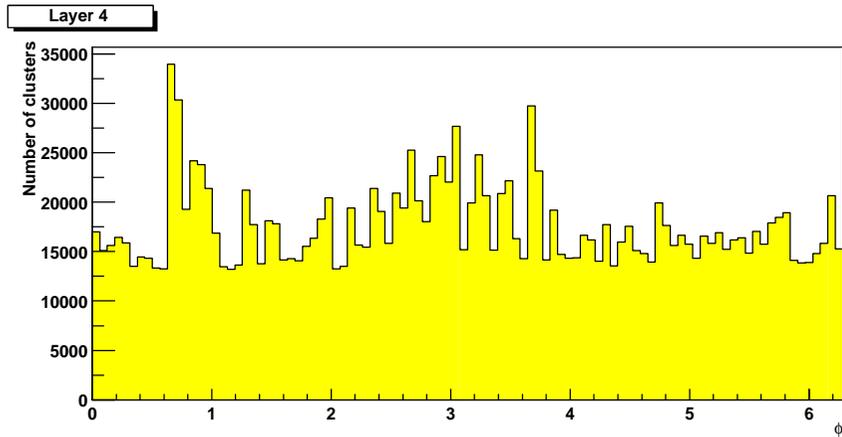
Old and new clustering



Old

New

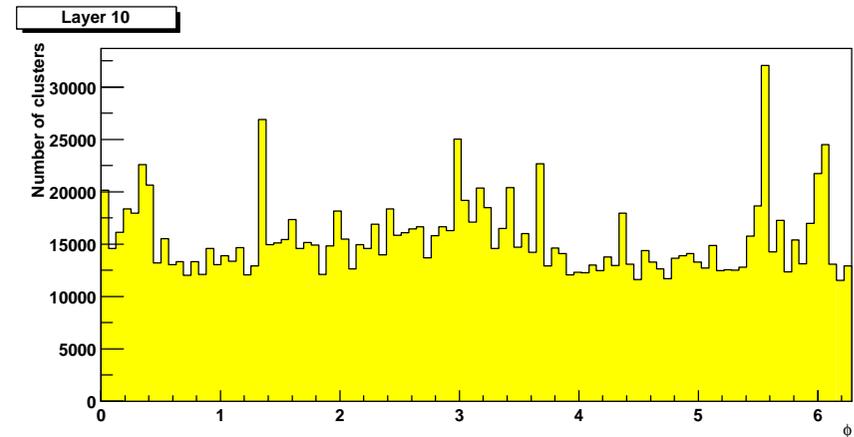
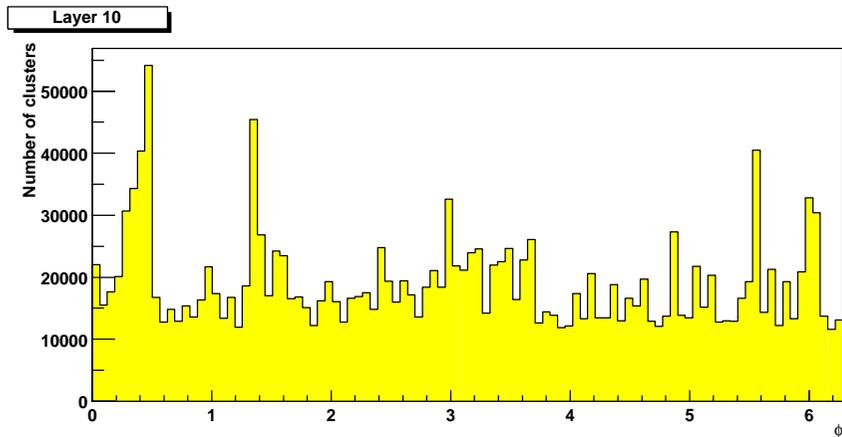
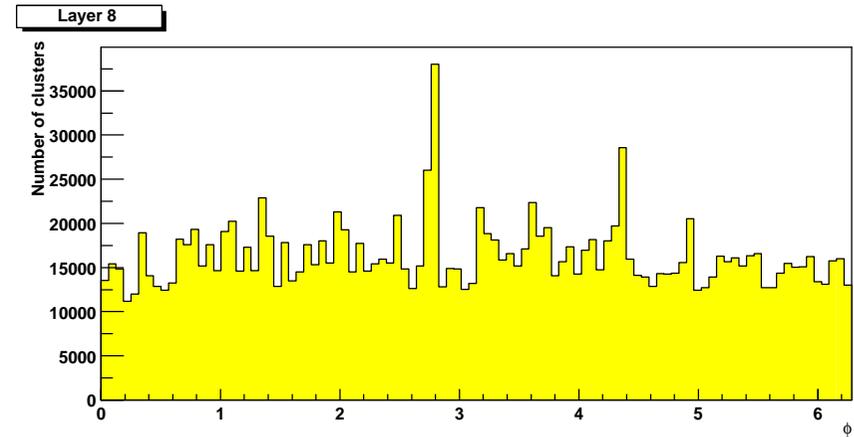
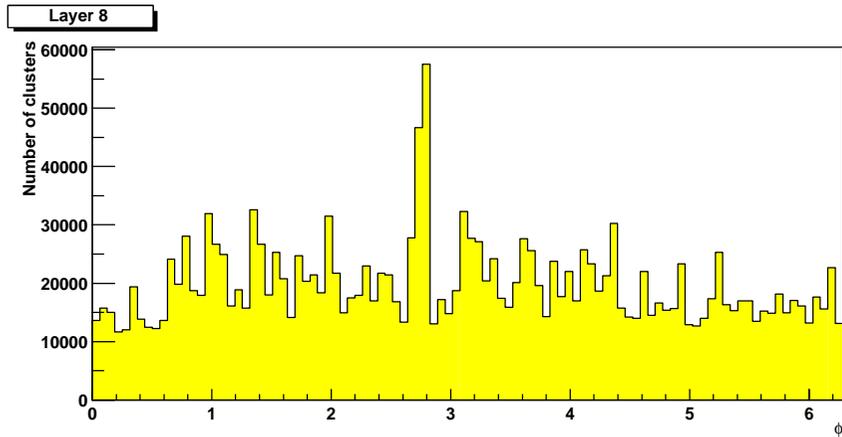
Old and new clustering



Old

New

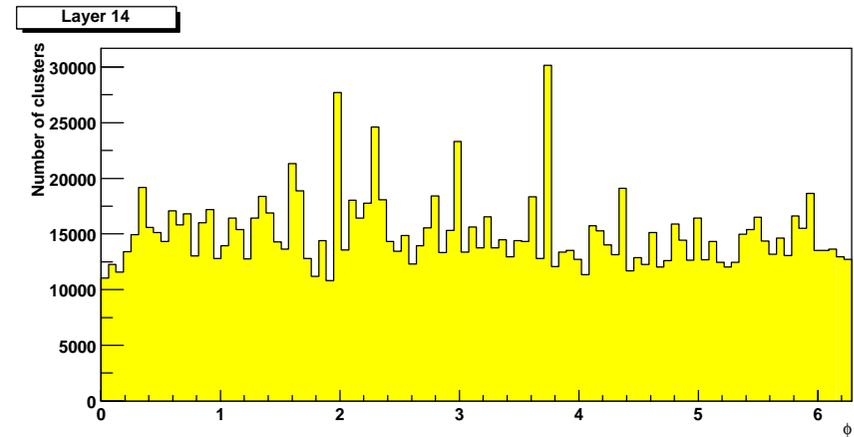
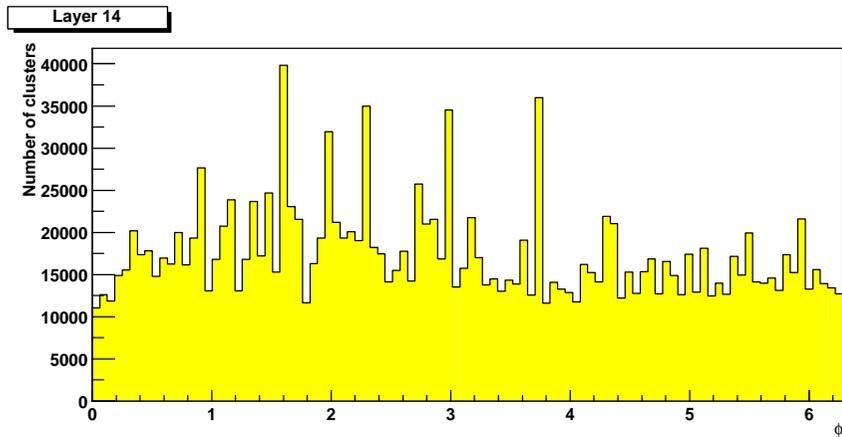
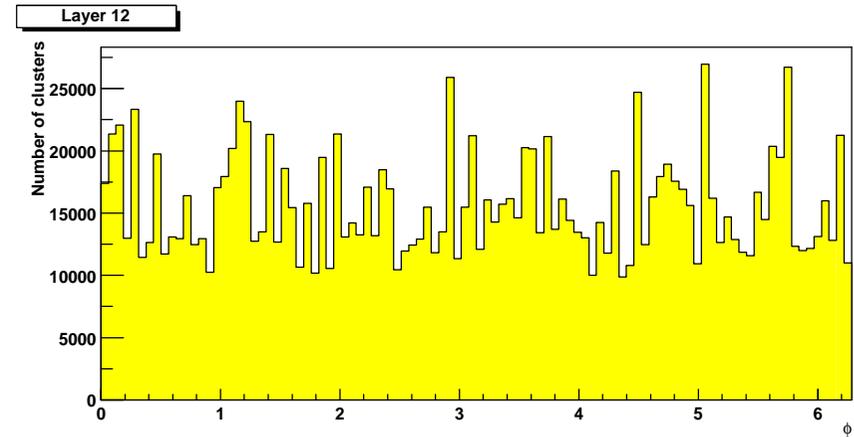
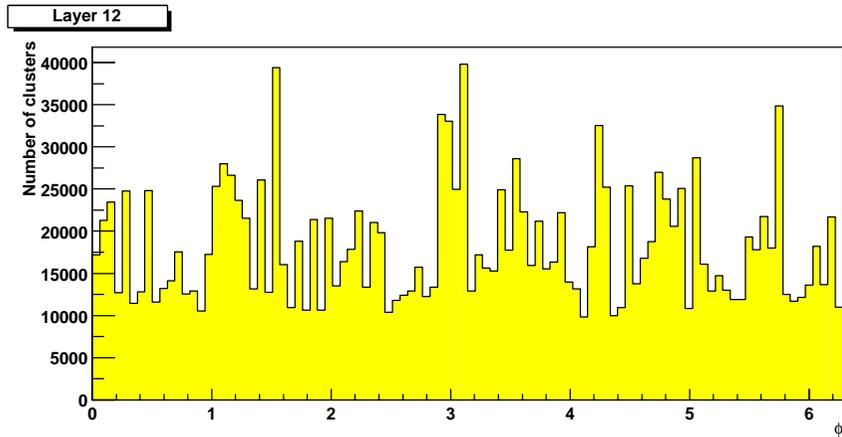
Old and new clustering



Old

New

Old and new clustering



Old

New

Conclusions

Proper CFT thresholds are now available for testing

- need to see it working with the tracking

Stable enough to be tried online (as soon as it can be got into a suitable release)

Borrows from the offline to obtain the thresholds, so we can capitalise on their efforts to get updated values

Updated thresholds (and cable maps) can be given to nodes without any code changes – but we need to think carefully about version tagging here