Status of MCC5.0

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Plan for MCC5.0

- LArSoft versions
- Neutrino Flux
- Reconstruction news
  - PMAlgorithm tracking
  - Shower reconstruction
  - Calorimetry
  - Pandora
  - WireCell
- Help from OPOS on grid job submission and monitoring

LArSoft Versions

- LArSoft v04_27_00 uses art v1_16_02. However, there is a bug in this version of art so that old files produced by v04_26_* and earlier releases are not readable.

  https://cdcvs.fnal.gov/redmine/issues/10614

- This bug is fixed in art v1_17_02. LArSoft v04_28_00 is tagged against this version of art.

- dunetpc develop head now depends on larsoft v04_28_00. Tagging is finished.

Neutrino Flux

- Dom Brailsford has made good progress on converting the Dk2Nu flux files to gsimple flux files.
- Will report at the next meeting.

PMAlgorithm

- Robert Sulej and Dorota Stephan are improving the PMAlgorithm track reconstruction, especially vertex reconstruction.

- Use dQ/ds information to improve vertexing so vertices do not break tracks.

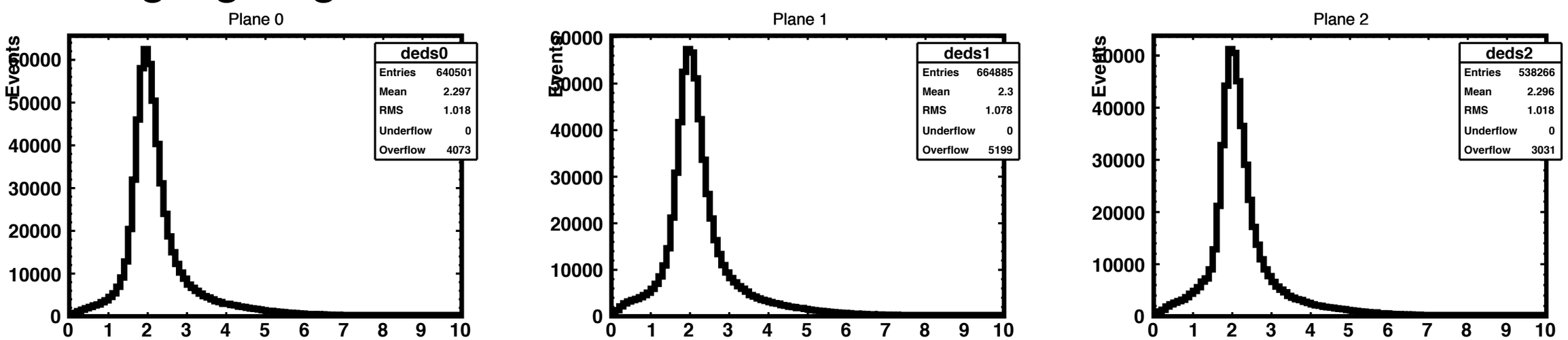
- Separate shower and track regions to improve speed on shower events.

Shower Reconstruction

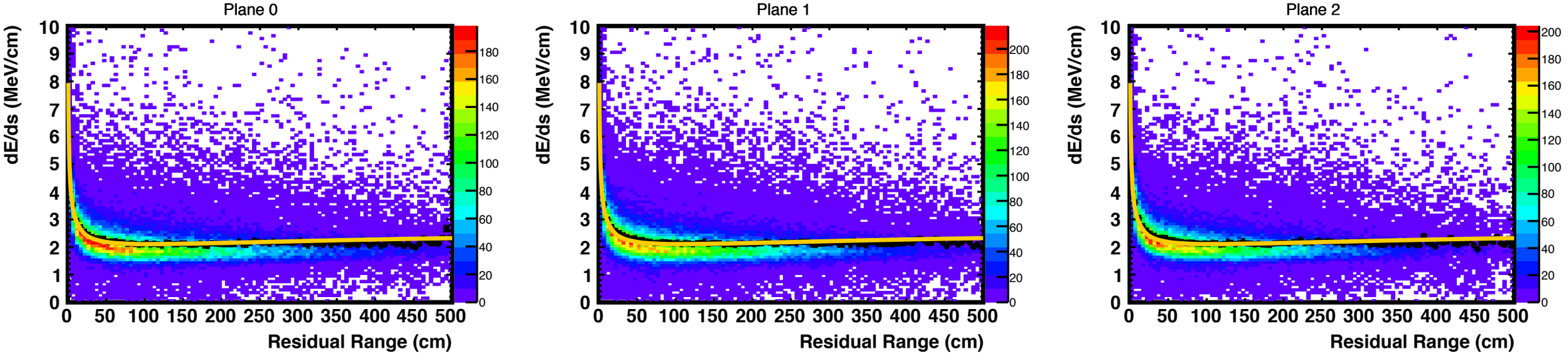
- Two algorithms in good shape:
  - DirOfGamma: Dorota Stephan
  - EMShower_module: Mike Wallbank
- Validate on single electrons and photons.
- Remove muon and charged pion tracks from showers.

Calorimetry

Through-going muons



Stopping muons

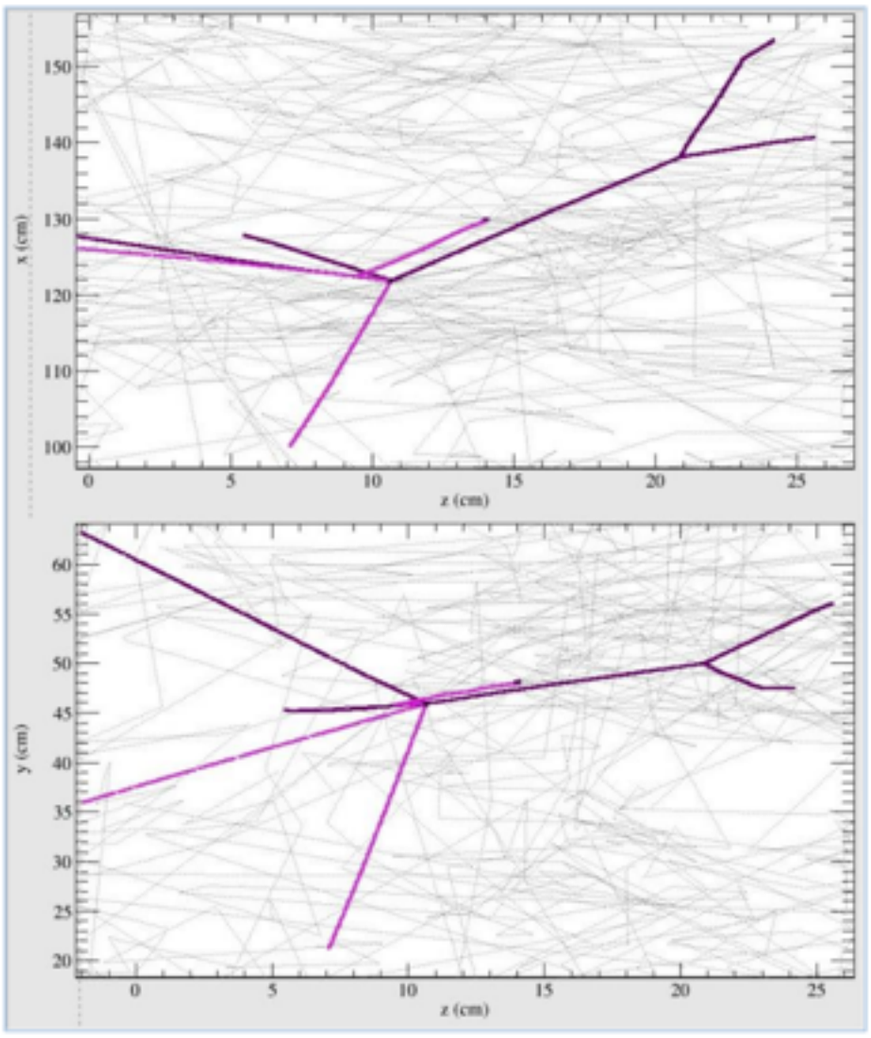


- The new track-hit metadata association Robert Sulej implemented has made calorimetry reconstruction a lot easier.
- https://indico.fnal.gov/getFile.py/access?contribId=3&resId=0&materialId=slides&confId=10552 (slides 5&6)

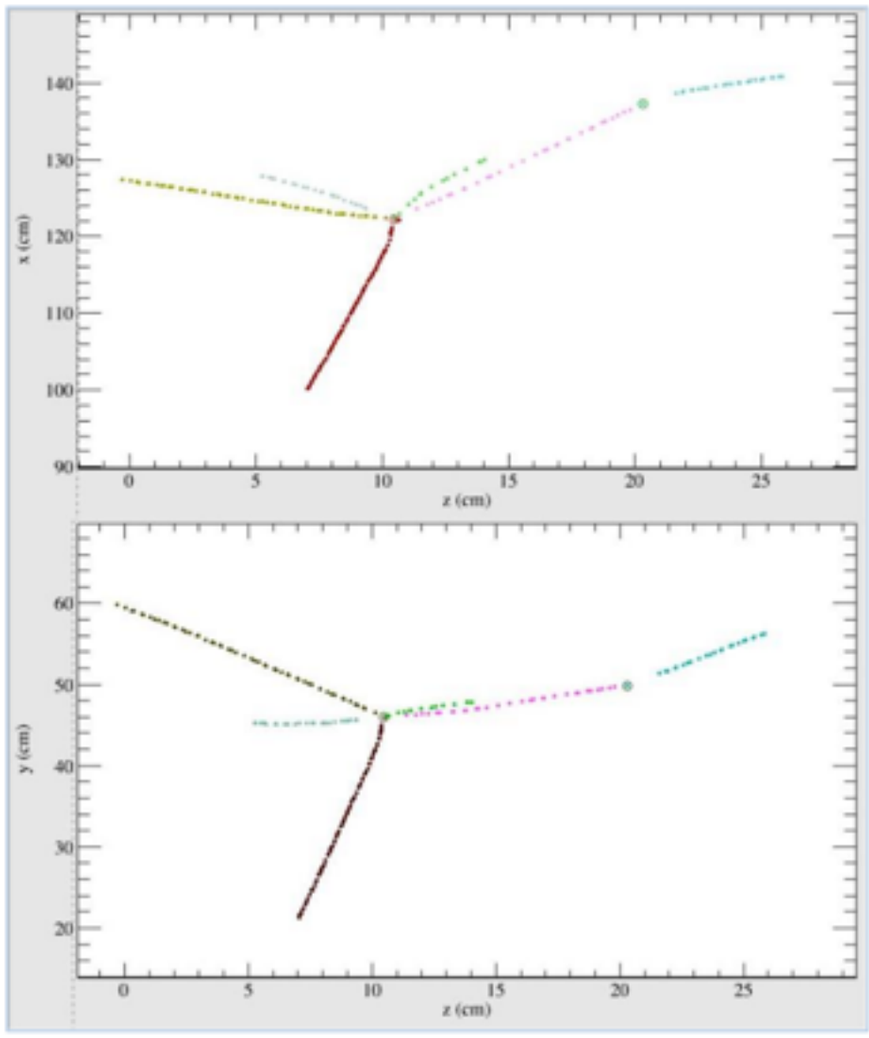
Pandora

- We would like to include Pandora neutrino reconstruction.
- Does it work with multi-TPCs?
- Need help on testing it.

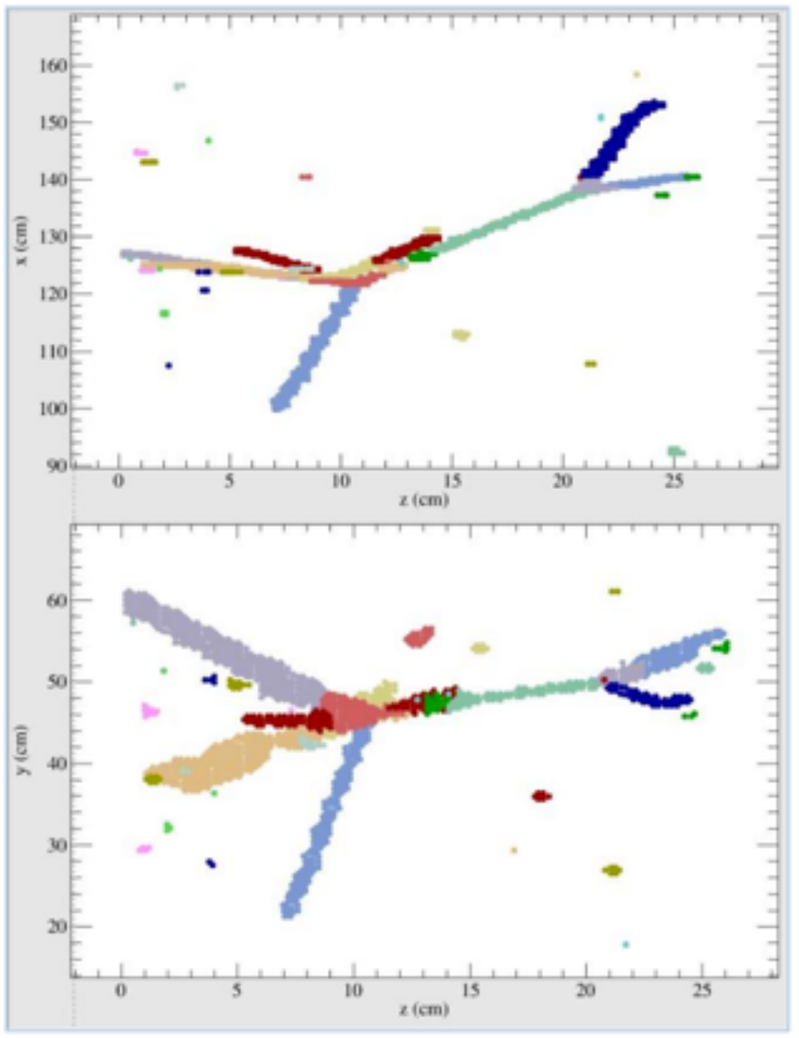
WireCell



MC truth



2D clusters + 3D PMA



Wire-Cell 3D clusters

- Xin has made good progress on 3D clustering/track/shower reconstruction.
- http://indico.cern.ch/event/455067/contribution/2/attachments/1175295/1698776/proto-reco-status-rsulej.pdf
- WireCell won't be ready for MCC5.0.

OPOS

- We are in communication with Fermilab's Offline Production Operations Service. We would like to get help from OPOS on grid job submission and monitoring.

- We (Tom, Karl and myself) had a meeting with Anna Mazzacane and other OPOS group members last Thursday. We demonstrated how to use project.py: https://cdcvs.fnal.gov/redmine/projects/dunetpc/wiki/Using_project_python

- Thanks Tom for adding OPOS members to dune VO.

Time Scale

- We hope to start MC production in 2 weeks.