

Status and introduction

A.Meregaglia (LP2I Bordeaux)

DUNE FRANCE Analysis - Zoom - 16/10/24

Advancements from latest meeting

CRP Geometry and digitization

- CRP gaps pushed by Viktor in official code. G4 deposits saved in stand alone tree and possibility to save digits in IonAndScint tree (framework ready real numbers to be included). ✓
- Validation and impact on energy resolution ongoing by Ginevra. ✓
- The digitization discussion is ongoing.
 - Discussion with Dom and Haiwang seems to point towards the use of existing SpaceCharge effect .
 - First test with dummy map yet to be done. ✗
 - Work on real map in parallel. Luis il leading this effort at LAPP.

Advancements from latest meeting

Muon tracks reconstruction

- Issues on the pandora reconstruction of tracks (splitting) shown by Matteo. Any news? ?
- Issue in coldbox tracks shown by Leila with negative ranges. Any news? ?

Energy resolution

- Work from Ginevra to validate the G4 modes and comparison with FLUKA on electromagnetic showers. ✓
- Work ongoing step by step validated up to the recombination. Hit reconstruction and Pandora yet to be tested. ✗

Advancements from latest meeting

Hit reconstruction and SummedADC

- The memory leak after the modification in LArReco was solved (simple problem with versions of different packages). ✓
- Changes pushed in the release 9-92 and now available for everyone. ✓

Issue closed!

Other (solved or critical) points not mentioned here???

Urgent topics

- Finalize the geometry and digitization in the CRP gaps and evaluate the impact on physics in particular on EM showers.
- Now that the ADC issue is solved, it could be used to understand the possible impact on calorimetry.
- Dig into pandora to improve the track reconstructions starting with muons. Large effort needed to have a final track by track reconstruction of the event instead of energy blobs.
- Pandora also seems to be at the basis of the very bad energy resolution assumed for EM shower with respect to previous LAr TPC results. The improvement Pandora for EM showers reconstruction and in general for the neutrino events topology should also be in our pipeline.

List probably not exhaustive... any other idea?