

LArSoft Coordination Meeting

Release and project report

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Fermilab

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Today's agenda and speakers

- Release and project report (Erica)
- Tracking excessive memory use at home (Marc Paterno)
- Marley updates (Steven Gardiner)
- AOB

Releases

- Last week
 - v06_49_00 released Sept 6
 - First release with *art* v2_08_03 (and *nutools* v2_16_03)
 - Necessary changes for experiment code in branch `feature/team_for_art_0_08` (Should have been applied already)
 - **PtrMaker moved to *art*** with this release of *art*
 - Update private code with `v06_49_00-PtrMakerInArt.sh`
 - **Forwarding header files will remain in LArSoft for one month**
 - New charge deposition-based 3D reconstruction module (from Chris Backhouse)
 - Updates to cluster 3D (from Tracy Usher)
 - See [the v06_49_00 release notes](#) for more details on changes
- This week
 - No merge requests at present

Status of on-going architectural projects

- recob::Track changes

- A reminder: previously completed Phase 1 changes in June
 - Added track fit information, introduced policies for trajectory points, etc.
 - Provides the basis for uniform definition of tracks from different algorithms, treatment of fits, etc.
- Have recently been working on Phase 2 changes
 - Introduce helpers to write tracks with all requires associations ← completed
 - Introduce a track “proxy” (previously called “facade”)
 - Hides complications of finding associated hits and clusters
 - Will be extended to include a number of other associated data structures in Phase 3

Specification of the interfaces here being finalized ← current status

- **Will present these soon**

Status of on-going architectural projects

- Revision of recob::SpacePoint

- Motivated by the several active 3D reconstruction efforts
- Goals
 - Provide a uniform interface between 3D SpacePoint finding and downstream PR
 - Include all information needed to store results of / drive 3D pattern recognition
- Complements recent discussion with pixel-based L/GAr TPC efforts
 - Discussing how to integrate pixel reconstruction into LArSoft
 - Enabled by 3D efforts!
- Straw proposal under discussion at recent architecture meeting
 - Include **charge (new!)**, covariance matrix, chisq etc, by implicit association
 - Via parallel vectors - just need to know the index to navigate to associated elements
 - Plan to use “proxy” concept to simplify finding associated data
 - A number of issues related to these choices are under review (e.g. track fitting)
- Will bring this discussion to Offline Leads / Coordination Meetings soon

Status of on-going architectural projects

- Vertex fitting
 - New vertex fitting code will soon become available (from Giuseppe Cerati)
 - Need to revise recob::Vertex in order to accommodate fit result
 - Will discuss all of this at up-coming meetings
 - Already some discussions about this taking place in MicroBooNE

3D pattern recognition workshop at CERN?

- In discussing with pixel people, idea of a 1-day workshop at CERN to discuss 3D pattern recognition with ALICE
 - Share ideas with people who have been working for a decade with 3D reconstruction from pixel-based detector
 - Seems especially timely given the current thrust on 3D PR

Thinking in terms of November time frame?

- Anyone interested please contact me (erica@fnal.gov)

Status of on-going sub-projects

- LArG4 re-factoring project
 - No report this week
- CI system operations
 - Vito di Benedetto
- Usability: associations
 - Saba Sehrish
- Profiling and optimization project
 - No report this week
- LArSoft documentation
 - Katherine Lato

The end