LArSoft Coordination Meeting

Release and project report

Erica Snider
on behalf of
the SciSoft team
Fermilab

October 29, 2024

Today’s agenda and speakers

- Release and project report (Erica)
- Energy reconstruction updates (Henrique Souza)
- AOB

Releases

- Since Sept 17 LCM
  - v09_93_00 released Sept 24
    - New features
      - LArSoft/larsim#141: Update EMB model parameters to published values
    - Bug fix
      - LArSoft/larg4#53: Change warning message to debug (as originally intended)
  - v08_05_00_27 released Sept 24
    - MicroBooNE MCC9.1 production release

Releases

- Since Sept 17 LCM
  - v10_00_00 released Sept 26
    - Deployment of refactored LArSoft geometry system
    - Based on v09_93_00
    - Find details at the Feb 20 LCM, and the feature branches / PRs needed to update experiment code in the “Release and project report” from the Dec 12, 2023 LCM.
  - v010_00_01 released Oct 1
    - Bug fixes
      - LArSoft/lardata#36
        - resolve redmine issue #29061
        - Use sqlite3_finalize to clean-up memory

Releases

- Since Sept 17 LCM
  - v10_00_02 released Oct 10
    - Bug fixes
      - LArSoft/larsim#142
        - Fixes problem that led to certain weights being applied twice.
        - This was recently fixed in GENIE.
        - Note that larsoft has a copy of the GENIE code. The GENIE code itself is in a standalone function which is not used by larsoft.
      - Adaptations to V10 geometry
        - Fix issue in ProtoDUNE-DP reconstruction that was using now non-standard method to get wire pitch.
          - LArSoft/larreco#73
          - LArSoft/larpandora#41

Releases

- Since Sept 17 LCM
  - v10_00_03 released Oct 21
    - New features
      - New version of wirecell (v0_29_1) and delaunator (v1_0_0)
      - LArSoft/larrecodnn#47: Changes needed for delaunator v1_0_0 update
  - v10_00_04 released Oct 21
    - New features
      - LArSoft/larpandoracontent#67
        - Updates to support supernova neutrino reconstruction, and to provide Pandora metric calculations that can be backwards compatible with legacy metrics.
      - LArSoft/larpandora#42
        - Option to override nuance code for particles of supernova origin which otherwise break the logic of the code

Status of PRs

- Under discussion
  - larreco#72: Updates to momentum calculator
    - Will hear about this today!
  - larrecodnn#48: Provides Triton/NuSonic support to NuGraph
    - Allows dispatching inference workload to remote/local GPU server
  - larwirecel#44: (opened Jan 17)
    - Enable multiple signal response simulation across YZ-plane
- Approvals in progress
  - larreco#74:
    - Put check on iterator for hit sum accumulation to avoid end before begin

Status of coming updates (updated since Sept 17, 2024 LCM)

- **Geometry refactoring**
  - Deployed! As of Oct Sept 26
  - Feature branches / PRs needed to update experiment code are available
    - See Release and Project Report, page 6, at Dec 12 LCM for v10_00_00rc0
    - Should work for v10_00_00rc4. If not, contact scisoft-team@fnal.gov
  - Quickly found and fixed some bugs. Yay!

Status of coming updates (updated since Sept 17, 2024 LCM)

- **Geant4**
  - Plan to build LArSoft release candidate with Geant v4_11_2_p02
    - The most recent production version recommended by Geant4 group

    Note: **Geant4 group strongly advises migrating with high priority**
  - Starting to work on this
    - Expect there will be required changes to the code
  - Will require experiment sign-off prior to migration

Status of coming updates (updated since Sept 17, 2024 LCM)

- **Spack migration**
  - The major pre-migration milestones
    - Enable LArSoft development using Spack – essentially done as of Aug LCM
      - Introduces multi-product development (MPD) tools to provide some mrb-like functionality
    - Establish LArSoft release mechanisms, procedures, policies
      - Now have a proven technique that works. Some provisos for building on top of it.
      - Still iterating on draft document with updated procedures, policies, SciSoft / experiment division of labor

    Expect more details at the next LCM.
  - Until migration
    - Must run / build LArSoft with UPS inside SL7 containers.
    - See Developing LArSoft with containers wiki page and your experiment documentation
  - Latest Spack build of LArSoft: v10.00.03. Details at Spack overview wiki

The end