

# LArSoft Coordination Meeting

*Release and project report*

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on behalf of  
the SciSoft team  
*Fermilab*

February 7, 2023

# Today's agenda and speakers

- Release and project report (Erica)
- Full optical simulation using the new LArG4 (Alejandro Castillo)
- AOB

# Releases

- Past several weeks:
  - v09\_64\_00 released Dec 8, 2022
    - New features
      - [larana#22](#): module to extract information from photon detector
      - [larsim#105](#): only do expensive TotalMass() calculation if necessary
    - v09\_64\_01 released Dec 15, 2022
      - New features
        - [larsim#104](#): module to generate simulate photons within a detector for NN training for fast photon simulation
      - Bug fixes
        - Update FindGENIE.cmake in nufinder. Resolves [issue #27623](#)

# Releases

- Past several weeks:
  - v09\_65\_00 released Dec 16, 2022
    - Geometry changes in preparation for refactoring of readout geometry description
      - [larcorealg#34](#), [larwirecell#27](#), [larana#23](#), [lareventdisplay#18](#), [larevt#20](#), [lardata#30](#), [larpandora#29](#), [larsimdnn#9](#), [larsim#106](#), [larrecodnn#36](#), [larreco#48](#), [larexamples#11](#), [lardataalg#38](#), [larcore#14](#)
      - All approved at Nov 29 LCM
      - See [release notes](#) for experiment PRs and feature branches
  - v09\_65\_01 released Dec 20, 2022
    - Bug fixes
      - [larreco#49](#): Fixed but introduced with geometry changes ([larreco#48](#))

# Releases

- Past several weeks:
  - v09\_65\_02 released Jan 9, 2023
    - Updated ifdhc to v2\_6\_13
  - v09\_65\_03 released Jan 19
    - Bug fixes
      - [larpandora#31](#): Update ShowerStartPosition type to fix type mismatch bug
      - [LArSoft/larsim#109](#): Fix to address rollup in flash purity calculation
      - [LArSoft/larsim#108](#): setting tune must now happen before PDGLibrary::Instance()
  - v09\_66\_00 released Jan 26
    - New features
      - [larreco#50](#): support ProtoDUNE VD
      - [larpandora#33](#): changes from TVector3 to Point\_t and Vector\_t to address [issue #277737](#)
      - [larpandora#32](#): swap to use of geo::Vector\_t. Also fixes related runtime type mismatch
      - [larbatch#20](#): jobsub\_lite updates. Updated project.py to work with jobsub\_lite. Backwards comp.

# Releases

- Past several weeks:
  - v09\_66\_01 released Jan 31
    - New features
      - [LArSoft/larpandoracontent#48](#): CPU optimization of cosmic ray reco. No physics changes.
  - v08\_05\_00\_20 released Jan 27 (uB MCC9.1 prod release)
    - MicroBooNE MCC9.1 production release
    - Updates ppx to v02\_11\_05
- This week
  - Approved PRs
  - *art* 3.12.0 coming soon
  - Also coming soon: pycurl to be included in LArSoft distribution (but not set up automatically)

# Status of PRs

- Approval in progress
  - [larreco#51](#): Re-add N+1 Gaussian peak fitting lost in earlier refactoring
    - Disabled by default, so no changes to output
  - [larreco#52](#): Add SummedIntegral calorimetry method
    - No changes to output are expected (!!)
  - [larana#24](#): (opened Dec 13, 2023)
    - Adds tool to use Gaussian fit for rise time calculation
    - Nearly done addressing final comments.

# Status of PRs

- Under discussion:
  - [larsimdnn#10](#): Change method to find where the graph lives (opened Dec, 2022)
    - Closed by author last week, but will re-submit after updating to make compatible with mainline develop history
  - [larsim#95](#): Add ability to read HepEvt events from server (opened May 30, 2022)
    - Discussed at a previous LCM
    - Author currently addressing security issues (??)



# Coming updates

## **art 3.12 migration**

- Expect to migrate soon
- See [Kyle's discussion at Nov 1 LCM](#)
- Allows needed compiler updates

## **Compilers**

- After art 3.12, will migrate to **clang 14 and gcc 12.1**
- clang 14 needed by newer versions of Geant4: 4.11+
  - LArSoft now at v4\_10\_6\_p01e (also builds with clang 14 and gcc 12.1)

# Multi-threading and acceleration workshop

- Proposed by experiments last year
- Now scheduled for Mar 2-3 at Fermilab (will be a hybrid meeting)
  - Presentations on the two mornings
  - Open working time in the afternoon of Mar 2
- Goals
  - Learn MT and acceleration capabilities of frameworks and common toolkits
  - Share experiences about existing utilization and throughput problems
  - Explore how MT and acceleration is being used to address them
  - Discuss results, opportunities opened by applying these techniques
- Registration and details available at <https://indico.fnal.gov/e/larsoft-mt-workshop-2023>

The end