Analysis Tools Summary

MicroBooNE Collaboration Mtg
Eric and Herb,19-Feb-2015

outline

- progress since December collaboration meeting

    - in which I mostly direct the interested reader to other talks at this meeting

- MCC6 preparations

- Business

Reco

- Tracking — Tools from Image Analysis, 3D clustering

  - see Tracy's talk at docdb ___

- Showers — ERTool

  - see Kazu's/Andrzej's talk at docdb ____

- Leonidas's MCS talk at docdb ___.

Sim

- Space Charge Simulation

  - See Michael's talk at docdb ____. Will run an MCC6 cosmics sample.

- Richer Charge Simulation — induced charge on neighbor wires

  - see Leon's talk at docdb ____. Will run an MCC6 cosmics sample.

- parallel GPGPU computing for photon simulation

  - Very cool work leading toward future LAr Reco compute models…

  - see Taritree's talk at docdb ____

- Electronics parameter optimization and validation and Wire ROI tuning.

  - Xin and Jyoti and YiChen at BNL. Jyoti's talk at docdb ___

- Photon lookup lib with 32 PMTs and modern-era geometry

  - Matt docdb 4093 and Ariana's talk at docdb ___.

Tools qua Tools

- `project.py` is now the LAr lab-wide job submission tool. I direct you to yesterday's talks (docdb 4082) on batch submission and docdb 4076

  - Many changes had to go in for SCD's jobsub_tools -> jobsub_client transition and our transition away from xrootd. More changes will be needed at the uboone level for MCC6 stage redefinitions.

  - Herb has built a GUI: `projectgui.py` with which to manage submissions, monitoring, prep'ing for each stage…

- Calibrations database, docdb 4094.

  - This is the long-discussed, intelligently-served offline database into which a nearline Calibration process inserts and from which offline analysis jobs query. The 3rd of the three Kazu databases we need for complete data flow. (The other two are mainly for online use.)

- Sowjanya added metadata to AnalysisTree, see docdb 4053

- Continuous Integration: http://dbweb4.fnal.gov:8080/LarCI/app/view_builds/index

Continuous Integration tests

- Every push to the develop branch triggers a LArSoft build.
- We could use someone to watch/maintain this.
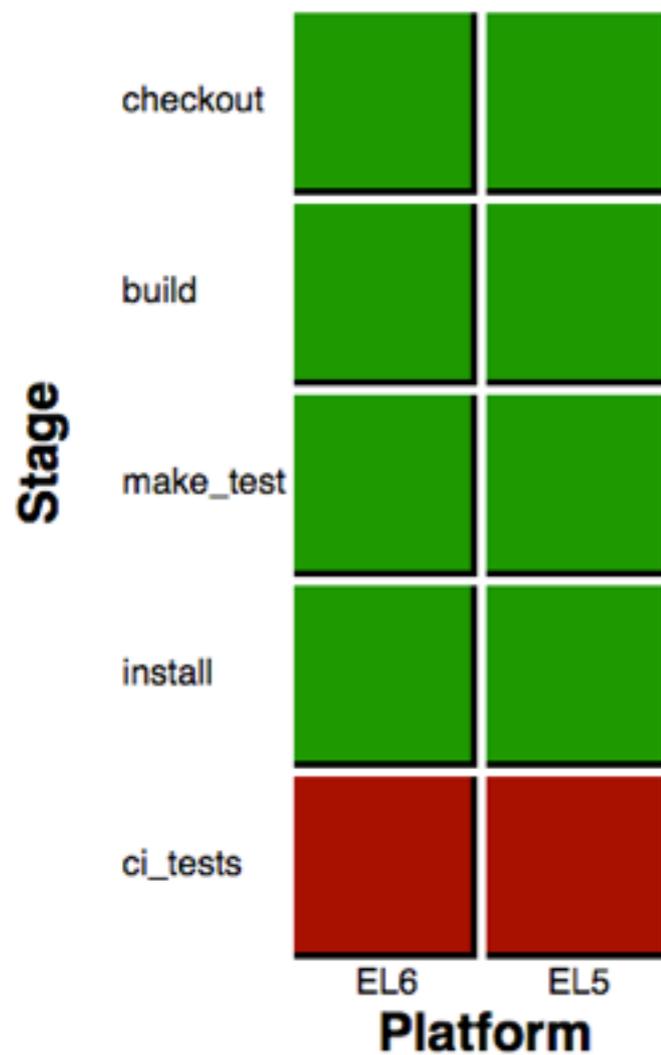
This is due to the not-yet tuned new HitFinders that fail the K-S tests wrt the old build.
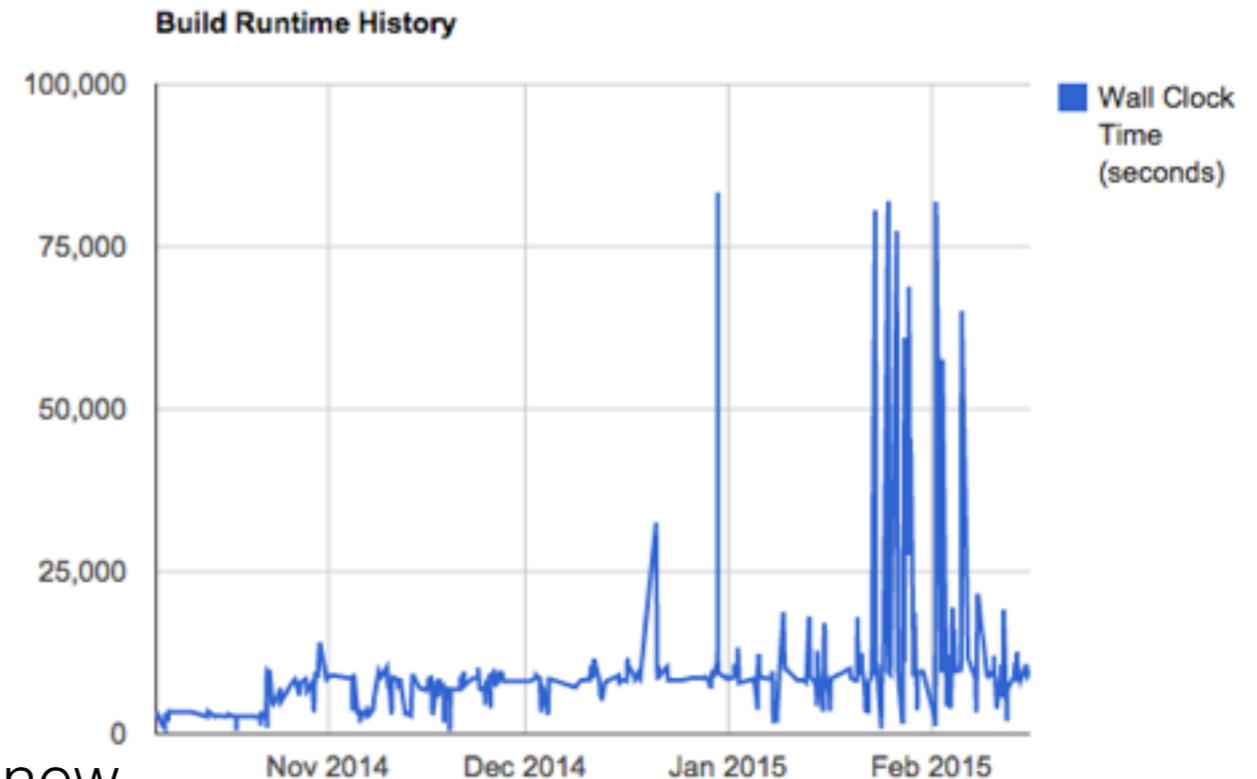
New Data Structures

- Most of our persistent data classes have been revisited and "optimized" for what MicroBooNE needs.

  - Wanted mainly to get the art::Ptrs out of the objects written to file, so that any framework could read/handle them. But also wanted to ensure the data members are appropriate to our use.

  - We have ended a few month process of design/review/changing all the code to handle all these changes. Gianluca's status talks at docdb 4024 and https://indico.fnal.gov/conferenceDisplay.py?confId=9383.

MCC6 status

- Samples have been run through generation + detector simulation with v04_00_00. We have sign-off for electronics settings for the RawDigit level after much discussion over past week. Send v04_00_01 sample requests to me/Kazu now. Will generate formal samples with v04_00_XY in N~2 wks.

- Watch docdb 4089 for sample list and http://www-microboone.fnal.gov/at_work/AnalysisTools/mc/ for actual files to appear.

- If you have a requested sample it is perhaps not too late. Send your request, and better, a fcl file that generates it.

MCC6 samples

- docdb4089

10k events except where noted
prod_eminus_0.1-2.0GeV_isotropic_uboone.xml
prod_eminus_0.5-5.0GeV_25degf_uboone.xml
prod_gamma_0.1-2.0GeV_isotropic_uboone.xml
prod_muminus_0.1-2.0GeV_isotropic_uboone.xml
prod_muminus_0.5-5.0GeV_25degf_uboone.xml
prod_muplus_0.03-2.0GeV_25degf_uboone.xml * x20   *   did not run last time. low KE.
prod_p_0.1-2.0GeV_isotropic_uboone.xml   did not run last time
prod_pi0_0.1-2.0GeV_isotropic_uboone.xml
prod_piminus_0.1-2.0GeV_isotropic_uboone.xml
prod_piplus_0.1-2.0GeV_isotropic_uboone.xml

20k events except where noted
prodcosmics_uboone.xml
prodgenie_bnb_nu_cosmic_uboone.xml
prodgenie_bnb_nu_uboone.xml   200k run
prodgenie_bnb_dirt_nu_uboone.xml   200k run ->~10k survive
prodgenie_bnb_dirt_nu_cosmic_uboone.xml   200k run ->~10k survive
prodgenie_bnb_nue_cosmic_uboone.xml
prodgenie_bnb_nue_uboone.xml

prodgenie_numi_nu_uboone.xml   200k -> ~10k
prodgenie_numi_nu_cosmic_uboone.xml   200k -> ~10k
prodgenie_numi_dirt_nu_uboone.xml   10k
prodgenie_numi_dirt_nu_cosmic_uboone.xml   10k

prodstopmu_cosmic_uboone.xml

prodcosmics_uboone_spc.xml (spacecharge)
prod_muminus_0.1-2.0GeV_isotropic_rcs.xml (richer charge sim) 10k
…. 1k of which is overlaid with cosmics   1k
…. all with same seeds, same noise in detsim as non-rcs sample
prod_eminus_CCQE_uboone.xml   10k
prod_gamma_e-equiv_CCQE_uboone.xml   10k
prod_proton_CCQE_uboone.xml   10k
prod_muon_CCQE_uboone.xml   10k
prod_eminus_SN_cosmic_uboone.xml

Computing Review

- Review is 23 and 24 February.

  - Talks are on the 23rd. Executive summary on the 24th.
    `https://fermipoint.fnal.gov/organization/cs/scd/coordinators/`
    `SitePages/MicroBooNE%20Review%20February%202015.aspx`

  - We think general attendance is not encouraged, …, just in case that's what you're into and had hoped to come. If you're there as an expert to help answer questions we welcome your attendance.

  - We thank all our MicroBooNE speakers in advance, recognizing that these are busy and productive people and we've stolen another couple days of their time for this review.

On-week/off-week

- There is the suggestion that uB go to an on-week, off-week format for meetings to try to allow work to get done at least 50% of the time.

- The Analysis Tools meeting will comply with this suggestion, starting now. Our meetings will thus be bi-weekly starting 26-Feb-2015, 9am.