

LArSoft minutes, 13-Jan-2011. -- Eric Church

LArSoft minutes appear at <https://cdcvs.fnal.gov/redmine/projects/activity/larsoftsvn>. (The location presumably at which you found these!) For further details of matters reported here drill down into the wiki, etc, at that redmine site. Everyone is welcome to attend the bi-weekly meetings. We go to a new schedule starting now. Next meeting will be 1/26/2011. That's the first of our new every-other-Wednesday schedule. It will be in Hornet's Nest, 8th floor x-over. We may move rooms after that. We will stay on every other Wed, starting now. Remote connection details at bottom; those details will remain constant... I think.

There are pdfs on the documents link of the redmine site for today's presentations by Ben and Brian (and Adam who was short-changed today, but whom we'll get to next week). Click Documents, sort by Date.

- Ben has checked all PhotonPropagation code, finally ported to ART. Yay, Ben. He discusses some problems and hurdles in his very nicely detailed presentation. Note that all root data files that a module may need are to go into /grid/fermiapp/lbne/lar/aux/code. Ben has a photon library there, which aids in his look-up fastsim mode. Note that other things, e.g., detector specific electronics response files live there too. Do not be thrown off by the lbne in the path name. Ben's fastsim mode is still in some development. We urge a review of materials Ben's presented elsewhere (at a summer, 2010 uBooNE meeting, e.g.) for the nice physics results and detector PMT design implications. Also his document from today is very descriptive to help one understand where he's at and how to get started pushing photons through the detector to the PMTs, etc.
- Brian presented a new RecoBase data object design and a LArSoft paradigm change proposal. See his pdf on the redmine Documents link. Basically, the idea is to make data objects which are generic and standard for handling by the next level algorithm. That currently is not what we have. This is motivated by batch mode reconstructing, if nothing else. But also of course for a clean and thorough, recon chain. 2D Clusters will contain start and stop points and everything needed by the 3D TrackFinding algos, e.g. Vertices will point to their 3D Prongs. Prongs will be general enough to mean either Track or Shower, both of which are 3D only objects. Errors on all calculated parameters will be required. See Brian's slides for specific objects and the design proposal. Further, the next step, which is huge, is that the current paradigm of modules writing out their desired, rather hand-crafted, objects will be replaced by, instead, modules which call multiple services to calculate and bring back objects. Those objects that currently are being produced and written by the modules, will then be stuffed into the new standardized RecoBase objects and only those will be written out. Much discussion ensued on this second phase of conforming to this new paradigm.

This issue is intertwined with another development change, which follows. CD ART gives us a new release this week. The plan is thus that in a few weeks (after NOvA and LBNE collaboration mtgs) we will tag a release. That will contain all code developed till then. During the subsequent, we hope, *one* week users will check out BUT NOT check back into this release. They will work in their private areas. During that week Brian and Eric will check ART out and its new job scripting (which is the prominent new feature). Brian will make his RecoBase data class changes. Eric and Brian then hope to port all the code that same week that uses these new classes. We hope that's that. We will then check into the main (only) branch. We hope users will then by two or three LArSoft meetings from now users find

themselves back on the main branch mainly unaffected/nonplussed by all changes. We will make announcements as we go. Then, the bigger change, the switch from the use of today's modules to tomorrow's modules/services paradigm will proceed in a non-disruptive, parallel manner. That is a longer term project. Some redundant code will be involved, but that's a good way to do it which does not make big impacts on workers used to the standard paradigm.

Let's hear next meeting (1/26/2011, Hornet's nest) from Adam regarding ongoing work with uBooNE geometry and a solution he's working on to include arbitrarily complex PMT geometries that will/can be added. He's also got a LAr1 and an LBNE geometry to discuss. Eric may show ongoing Kalman track work too from UCLA.

Details for the next meeting:

>>> video: 85LARSW

>>> phone: 510 883 7860 (ID 85LARSW)

>>> final location: Hornet's Nest, 8th floor x-over