

LArSoft minutes, 29-June-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. Next meeting will be 27-July-2011. (Would-be mtg date 13-July coincides with an LBNE collaboration meeting and a MicroBooNE Review.) It will be in the Racetrack, 7X0.

There are pdfs from Brian, Herb, Dave, Saima, Nadine on the documents link of the redmine site for today. (Eric is a LANL refugee w.o. connectivity this morning, so these minutes are based on the voice feed and are uninformed by the surely-beautiful plots available under the Documents link.)

Geometry nesting: Brian reports that to accommodate multi-TPC experiments (LBNE) a new layer, TPCGeo, is added above PlaneGeo. A couple functions needed a new argument in many places. Many try()/catch() blocks now inserted to produce an error message if NearestChannel() can't find a wire, cuz the electrons drifted off somewhere weird. More methods added to allow access to more explicit dimensions of detector.

Random Numbers. Brian has made the changes to take us over to ART's built-in RandomNumberGeneration service. System function rand() provides a default seed at beginning of module, over-writable by a user seed in order to gain control over initial seed. ART uses CLHEP. No more TRandom3(). In GENIE they use something like TRandom3() deep down under the hood, and we may be stuck unable to set seeds. Including a line `seed: 12` in a fcl file in the module parameters ought to set the seed in that module to 12 once the RandomNumberGeneration service is requested at the top.

Herb Greenlee. SpacePointService reconstructs 3D SpacePoints for 2 or 3 plane detectors. A chi2 is minimized against time distributions. A cut for time offsets is user-dialable. Thought given to N^3 nested loop cpu time consumption issue. See his talk for details. Almost usable by the consumer. Very exciting.

Saima on 3D Vtx Finding. She runs 5000 CC ArgoNeuT MC evts through HitFinder, ClusterFinder, HoughLineFinder, LineMerger, SpacePts, Track3DKalman, VertexFinder. Start w longest track, find doca with all other tracks. Best doca gets the vtx. About 1/3 of her evts died in Condor. ~60% of remaining evts pass her cuts. Brian urged perhaps running MCCheater up through SpacePts.cxx and then bringing in Track3DKalman only at that point to check for errors/ efficiencies of her algo. Eric suggests perhaps dropping HoughLineFinder and LineMerger and just throwing the Clusters of hits at Track3DKalman. There is some concern that w.o. fitting lines within clusters and distinguishing them this may lead to proton and muon hits blurring into same 3D SpacePoints.

Nadine at Nevis is studying n-nbar evts. Starts with a few thousand p-pbar evts in uBooNE. She shows some event displays of true quantities. Nadine and Leslie, from his earlier studies, get different pion multiplicity distributions, which is not yet understood.

Nadine suggests that it'd be nice to have a Live *and* archived Instant Messaging-like room/ bulletin-board in which to seek advice/tips from the LArSoft community. All agreed this was a good idea. Andrzej will look into ROOT-Talk. Roxanne will look into a dedicated Skype channel.

The Skype idea may get the most traction since it's the way many of us work already and we already have it up on our machines most of the time. People worry that requiring users to fire up Pidgin or some IM client might be one step more than is reasonable. Brian thought the LArSoft listserv, which we use already for an email list, may already provide services like we want. That may address the archiving and queryable FAQ issue, but probably will not be useful for finding a Live person logged in ready to help. We'll discuss more on this at the next meeting.

Dave was not in attendance today. Many people hope he'll weigh in in 4 wks to explain the application of his new MagField package.

See ya at the next LArSoft mtg in the Racetrack, 7th floor on 7/13, Wed, 9am CST.

Details for the next meeting:

>>> video: 85LARSW

>>> phone: 510 423 9220 (ID 85LARSW)

>>> final location: Racetrack, 7th floor x-over