Directing the Reconstruction Effort

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Summary of Recent Studies

Andy Blake	time-based point vertex, single ring track direction, some looking at PMT coverage.
Jeff de Jong	energy scale and attenuation correction with cosmic muons.
Matt Wetstein	SandBox, timing related studies.

We are kind of in a "follow your heart" mode. This is great for getting the ball rolling but we need to a more focused approach to get to CD-1.

Reconstruction Drivers

- Need project management to prioritize what detector designs are to be considered and which of their aspects needs focus.
- Physics groups need to provide metrics against which we can evaluate our software.

Questions Needing Answers

A list of initial questions was started in the wiki a while back:

`https://wiki.bnl.gov/dusel/index.php/Detector_Design_Questions_For_CD-1`

1. Is a 4 pi veto needed?
2. What PMT coverage is needed?
3. What is the effect of detector size and shape?
4. What fiducial cut can be made?
5. What energy threshold can be achieved
6. Are adding Winston cones a good idea

Reconstruction software plays a part in answering these questions. What is needed from us needs to be distilled and specific tasks need to be defined and prioritized.

Organizing Reconstruction Tasks

I propose we use our Trac instance to manage the tasks and assign a ticket to each.

`https://lbne.bnl.gov/trac/report`

Tasks related to answering a particular question can be groups into milestones.

`https://lbne.bnl.gov/trac/roadmap`

This will give us a active view of the progress and allow for prioritizing tasks.