Subject: Re: PandaRoot meeting, Tuesday 7th of October, 10:00, EVO
Posted by Lia Lavezzi on Thu, 09 Oct 2008 13:16:40 GMT
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Hi all,
I have a doubt concerning the discussion during the last EVO meeting about not copying informations from one root file to another: I understand this is a problem, but I would ask for some clarification on one point.

Let me explain shortly the situation. In the STT we have three kinds of points:
1) PndSttPoint, which contains the MC info and is filled during Geant simulation
2) PndSttHit, which contains the single straw tube response and is filled during the digitization
3) PndSttHelixHit (not definitive, might change), which contains additional information to the PndSttHit ones and is filled after the reconstruction.

Let' s forget about PndSttHelixHit for a while: this needs to be changed and I will do it as soon as possible.

I see a problem, however, when talking of the transfer from PndSttPoint to PndSttHit (let' s call them for simplicity point and hit).
As I told during the meeting, the reason why we copy the info from the point to the hit is to keep a separation between the simulation and the digitization output, in the sense that the PndSttHit must be self sufficient and contain the whole information needed in the reconstruction, without the need to refer to PndSttPoint (exept for the cases when a comparison with the MC is needed). Our main concern is to keep the format of the data input to the reconstruction macro identical between real (future) data and (present) MC data.

This is done to be able to reconstruct also real data with the same code, when only hits will be available, and nomore points. I mean, suppose we have to reconstruct real data. Then we need the wiredirection of the firing wire (for example): if we don' t have all the needed information within the hit, but we should refer to the point to get it, how could we retrieve that info?
Note that in the hit we copy only the information which will come from the tube response (i.e. no MC position is copied, only the center of the tube for example, which can be accessed in real data).

But maybe I' m missing something, this is why I' m writing this in more detail, to better understand: is it correct that we want the code to be able to reconstruct both MC and real data, with the same kind of reconstruction? How do other detectors handle this?

On the other hand it is necessary to keep the root files as small as possible. We are thinking about finding a way to reduce the geometry related info written on file: for example saving only one number, which identifies the tube, and writing a lookup table with the correspondences between tube identfying number and geometrical information of the tube itself. We are still discussing. This would prevent the root file from increasing too much in size: the price to pay in this scheme is the duplication of the identifying number in the simulation and digitization output files. What do you think about this solution?

Sorry, maybe I should have asked during the meeting but I needed some little time to re-think about this and to discuss this also with Gianluigi and Susanna.

Thank you very much,