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Subject: Tracking discussion

Posted by [Stefano Spataro](#) on Wed, 25 Sep 2013 14:08:20 GMT

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Dear all,

since the tracking discussion in Bochum was somehow cut in the middle, I would propose to continue here in the forum, and to discuss also in the next SeeVogh meeting, next Monday, 30th September.

Andreas put this table in wiki:

<http://panda-wiki.gsi.de/cgi-bin/view/Computing/PandaRootDetectors#TRACKING>

My general impression is that we have "a lot" of manpower in tracking, but not equally distributed. Many people, many packages, but I believe we should try to focus on some goals.

In particular:

- a) there is only one guy involved in forward tracking, all the others are working on barrel tracking.
- b) only one algorithm considers time based stream, all the others not.
- c) there are many new algorithms, without completing the old ones.

The triplet finder was the only one using time information, but if I have understood well Marius left and nobody will continue it.

I think more people should be involved in the forward, and we should close algorithm w/o time and focus on time based reconstruction. The objections of the referees for STT were about t0 determination, and I have not seen any algorithm solving it in practice, Peter proposed his method which was never implemented (as far as I know, maybe in the triplet finder?).

In this sense new algorithms (even for new hardware, FPGA, GPU,...) not using time information are, my opinion, a bit dangerous, since in general people tends to continue to improve the algorithm instead of evolving towards our data stream. And without daq we will have no data.

About forward, I would like to see more people joining this part, but this will be hard

Moreover, we should define a strategy on:

- a) how to retrieve the MC truth of one track. At present the PndMCTrackAssociatorTask is used in the standard reconstruction, but FairLinks should be used. Who will implement such modification?
- b) how to assign a track to a MC particle, to evaluate efficiency and resolution, in particular when more particles produce hits in the same track, and when the same particle is reconstructed in more than one track
- c) which track selections to have good quality track? At least XX number of hits? At least X hits in parallel and Y in skewed hits? fitted? non fitted?
- d) standard task for all the tracking objects, to have the same efficiency/resolution definition.

These are just my informal thoughts, I would like to listen to your opinions about.

Regards

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