Subject: Tracking discussion
Posted by StefanoSpataro 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#TRACK ING

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 reconstructured 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