Subject: emc data flow diagram
Posted by Dima Melnychuk on Thu, 01 Nov 2007 19:16:30 GMT
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Hi all,
please find simple emc data flow diagram.

And in connection whith this I have one comment.
On last EVO meeting it was discussed what the object should be produced as the result of each subdetector reco - PndXxxRecoHit. So for emc it should be PndEmcRecoHit.

One of the tasks missing in pandaroot emc code (and it is implemented in Panda emc code in Babar framework) is energy and coordinate correction of the cluster as the function of energy and angle. And I suppose that this task can be a step between PndEmcBump and PndEmcRecoHit.

But I do not think that it will be implemented in nearest 1 week, i.e. for "pandaroot v2.0".

So should it be implemented an empty PndEmcBump to PndEmcRecoHit convertor now or can it be postponed?

Best regards,

Dima

File Attachments
1) emc_data_flow.ppt, downloaded 603 times
2) emc_data_flow.bmp, downloaded 1412 times

Subject: Re: emc data flow diagram
Posted by Jens Sören Lange on Tue, 06 Nov 2007 08:39:18 GMT
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Hi Dima,

as no emc expert replied, I would like to say that I think that an empty PndEmcBump to PndEmcRecoHit convertor for now is a good idea. I think we will postpone the release 2.0 for a few more days, maybe until the weekend, so there is still some time and maybe you can try. There are many things to think about, and maybe some things even have to be discussed on the next evo meeting, so a few days is not a problem, I think. Many people will be at GSI tomorrow, so we will try to talk to Mohammad and Florian to see, what they think.

So why do I think that the empty convertor is sufficient for now? As far as I can see it is easy to get the bump positions (e.g. TVector3 v1 in macro/emc/bump_analys.C). So if it turns out in the next few weeks that the energy and coordinate correction is absolutely needed immediately (I still think that at first we would have to check the g4 vs. g3 comparison again _before_ any applied correction which - expressed in a simplified way - "pushes" the cluster energy where we want to) then it seems that it is not so difficult to implement a preliminary correction (just for checking) not as a task, but just as a few lines into the macro bump_analys.C. Would you agree?

best regards, -- Soeren

Subject: Re: emc data flow diagram
Posted by StefanoSpataro on Tue, 06 Nov 2007 10:30:06 GMT
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Hi,
I think that if the PndEmcRecoHit should be our "final product" and almost a copy of PndEmcBump, it makes no sense to create an additional object: let's rename PndEmcBump into PndEmcRecoHit and that will be all, maybe with some modifications. I do not think we have to duplicate the same information in the stream, I think it is not necessary.

However, for the energy calibration, what one could do is to add a fEnergyCorrected as data member for the Bumb(RecoHit), that at the beginning will be equal to the normal fEnergy. Then one calls a Calibrater task which overwrites only the fEnergyCorrected, without needs of additional objects. In this way we have in the same object both the raw energy and the calibrated one.

In each case energy calibration depends on the transport model, so this step could be tricky before a good physics validation.

Opinions are welcome...

Subject: Re: emc data flow diagram
Posted by Dima Melnychuk on Wed, 07 Nov 2007 15:07:00 GMT
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Hi all,
I added to emc 2 classes PndEmcRecoHit and PndEmcMakeRecoHit.
I understand arguments of Stefano that it's almost a copy of PndEmcBump but nevertheless I created it as an additional class and not repalced the PndEmcBump.

The argument is that in PndEmcBump methods energy() and position() calculated correspondent values but in PndEmcRecoHit GetEnergy() and GetPosition() simply return correspondent data member so it can be more convenient for the following analysis. And in addition PndEmcRecoHit doesn't contain vector of PndEmcDigi's while PndEmcBump does.

But all this should be discussed and modified if necessary.

And I modified full_emc.C macro to produce at the end PndEmcRecoHit's objects.

Best regards,
Dima