Subject: TPC digitization for more than 1000 events
Posted by donghee on Fri, 27 May 2011 12:05:14 GMT
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Hi all,

I want to get some advice from all PANDA user!
I'm trying to optimize events numbers for simulation with may11 stable version in my local farm.

I have electron particle simulated mainly in central part, TPC make huge amount of avalanche electron at some particular events in digitization process.

Of course it should take really time....but also not likely, usage of memory increase more and more if the events are going to more than ~1000 events. Then finally jobs crash...without output.

Memory RAM set 8 GB and swap allocates 10.0G in my local machine.
But roughly 5% of run, which has 1000 events, have such kind of problem in my machine.

In order to avoid this inefficient memory handling at TPC dig,
I reduce my event number as 200 in run, then looks fine for all.

Does anyone test already TPC Digi part with stable PANDAroot and with more than 10000 events for instance?

Thanks,
Donghee

Subject: Re: TPC digitization for more than 1000 events
Posted by Felix Boehmer on Fri, 27 May 2011 12:11:32 GMT
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Hi Dnonghee,

could you be more specific of what you are doing and what exaclty happens?
I just ran 300 jobs with 5000 pion events each on our cluster, memory allocation LIMITED to 1.0 GB per job, without problems...

Cheers

Felix

Subject: Re: TPC digitization for more than 1000 events
Posted by donghee on Fri, 27 May 2011 12:34:24 GMT
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Hi Felix,

I'm trying now with may11, that is before last stable version at two days ago. It is not really last version at today.
Just one electron in central part (100 - 160 degree), gamma and proton only into very forward direction (10 degree).
Please don't ask me why there are proton... that is my hobby event. And interaction point is (0,0,30).

So then I have seen some avalanche creation and digitiztion in print out during run of digi macro. It looks like typically this...

Quote:

2020 Avalanches created
0 aggregations done.
3577 Signals created
PndTpcElectronicsTask::Exec
Building up padmap ...finished. 116 pads hit
.....
119 Digis created

If TPC procuded really big number of "avalanches created", sometimes more than 200000 for example, here I need quite a time to go further digitization or next event, then increasing memory more and more.

I submit jobs ~100 runs with each 1000 events, got 5% no output due to this problem. Simply machines are down!

If the situation will be improved with really last stable may11 version, then I'm happy, but I think there are not so much diffrences between last and before last.

Best wishes,
Donghee

Subject: Re: TPC digitization for more than 1000 events
Posted by donghee on Fri, 27 May 2011 12:40:16 GMT
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Hi Felix,

Honestly I didn't mention that I don't know exactly whether the printing out relates to only TPC part or some other detectors

Quote:

2020 Avalanches created
0 aggregations done.
3577 Signals created
PndTpcElectronicsTask::Exec
Building up padmap ...finished. 116 pads hit
.....
119 Digis created

If 1-3 lines are related to TPC, then my complain is still valid...

Donghee

Subject: Re: TPC digitization for more than 1000 events
Posted by StefanoSpataro on Fri, 27 May 2011 12:40:56 GMT
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This problem in tpc digitization is known since several months. It depends mainly on the machine you are using. With my SL4s I could not run more than 2000 events, with my new machine I can run 10k events without problems.

Subject: Re: TPC digitization for more than 1000 events
Posted by Felix Boehmer on Fri, 27 May 2011 12:45:02 GMT
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Hmm,

what momenta do your tracks have? Can you have a look at the clusters or simply the MC points - do you see anything weird?

If not then I don't know what's the problem.

Subject: Re: TPC digitization for more than 1000 events
Posted by donghee on Fri, 27 May 2011 13:00:13 GMT
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Hi all,

The electron has mostly momentum below 3 GeV. only 2-3% exceed more than 3 GeV.
I'm slightly confusing because of argue of felix.
You produced pion without any problem at (0,0,0).

I have also seen that TPC is very stable with 6 outgoing pion or kaon tracks of psi(3770) decay at interaction IR(0,0,0).

I will inform you further studies after updating of may11.
And I think this is good reference view to know, if we change IR(0,0,30) region, how will TPC perform.

Anyhow, thank you for your listening.

Best regards.
Donghee
