Subject: [CLOSED] DPM-Direct doesn't have Coulomb el.scattering part
Posted by Anastasia Karavdina on Sat, 07 Sep 2013 15:55:31 GMT
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Dear all,
I would like to use PndDpmDirect for my studies with DPM. Such studies I did many times before with so called DPM stand-alone.
As far as I understand PndDpmDirect is just interface to DPM generator, which runs PndDpmGenerator+FairPrimaryGenerator.
So generated results, if I run compiled executable, or if I run task with PndDpmDirect, shouldn't differ in terms of distributions of true (MC) variables.
But they have significant and very important difference, especially for the Luminosity Detector.
Basically, with current configuration, Coulomb part for elastic scattering is not simulated with PndDpmDirect, even if theta_min is set to very low value!
Please, find attached two plots with theta distribution of simulated tracks and note the difference between them close to 0 and 1.5 rad (in both cases Pbeam=1.5 GeV/c, number of simulated events=1e4, theta_min=0.1 degree).

Well, my standalone version is executable which I have to compile by hand. To do so one need to copy attached GNUmakefile in $PANDAroot/pgenerators/DpmEvtGen
Then in this directory type make and to resolve error
pgenerators/DpmEvtGen/main.cc:246: undefined reference to `dpm_gen__'
change dpm_gen__ to dpm_gen_ (x2 times in this main.cc file)

Afterwards executable created in $PANDAroot/pgenerators/DpmEvtGen

As you can see only one change here is dpm_gen__ "correction". I don't know why it's needed for standalone compilation and isn't needed for common compilation together with other packages in pandaroot. But as far as I remember this dpm_gen__ to dpm_gen_ was an annoying issue while ago.
Anyway all other lines/files in DPM stay exactly the same as in repository.

Any ideas why PndDpmDirect just ignore Coulomb part? Also it would be nice if somebody else could cross-check DPM spectrum to confirm problem which I describe above.

Cheers,
Anastasia.

File Attachments

1) thetaMC_direct.pdf, downloaded 553 times
2) thetaMC_standalone.pdf, downloaded 549 times
3) GNUmakefile, downloaded 517 times

Subject: Re: DPM-Direct doesn't have Coulomb el.scattering part
Posted by StefanoSpataro on Sat, 07 Sep 2013 16:01:02 GMT
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Which flag are you using for the dpmdirect, and also for the dpm standalone?

And how are you plotting the variables? From MCTrack in both the cases or directly from the generator in case of standalone?

Subject: Re: DPM-Direct doesn't have Coulomb el.scattering part
Posted by Anastasia Karavdina on Sat, 07 Sep 2013 16:04:40 GMT
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If you mean the mode it is 1=el.+inel.

For 2 attached plots I took files produced directly in generator. But I checked that spectrum with DMPDirect is similar to output from $PANDAroot/build/bin/./DPMgen executable compiled within standard pandaroot compilation: there is very small amount of particles flying in range of LMD.

Subject: Re: [SOLVED] DPM-Direct doesn't have Coulomb el.scattering part
Posted by Anastasia Karavdina on Wed, 23 Oct 2013 16:05:04 GMT
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Hi!
With fresh pandaroot installation I can't confirm my problem in September.
Maybe the problem was caused on my side by mixing of main.cc files

Anyway, sorry for the trouble!

Maybe to avoid father confusion it would be nice uncomment some printing lines in DPM. For me personally the most useful are inelastic and calculated elastic total cross-section in mb (in attached file lines 328 and 329)

Best regards,
Anastasia.

File Attachments
1) init.f, downloaded 465 times

Subject: Re: [SOLVED] DPM-Direct doesn't have Coulomb el.scattering part
Posted by StefanoSpataro on Thu, 24 Oct 2013 13:38:27 GMT
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Well, one problem less