Subject: MC true match with geant4
Posted by donghee on Thu, 31 Oct 2013 11:14:26 GMT
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Dear all,

I am wondering how one can handle MC true match for Geant4 case.
I am using TGeant4 and PndEvtGenDirect for evtgen generator.

If I turn off saving the event tree,
evtGen->SetStoreTree(kFALSE);
then simulation process works fine.

But If I turn on StoreTree to use MCtruth match later on for signal MC analysis,
evtGen->SetStoreTree(kTRUE);
then Geant4 cannot recognize this event tree due to different particle definition.

How can we avoid this problem?

We need a event tree to make a truth matching in analysis level.
It must to be saved!

Do you have any idea or solution for this problem?

Quote:
Run 0 start.
-W FairPrimaryGenerator: PDG code 88881 not found in database. This warning can be savely ignored.
Warning in <TParticle::SetPdgCode>: PDG code 88881 unknown from TDatabasePDG
[INFO] FairPrimaryGenerator: (Event 1) 12 primary tracks from vertex (0.000000, 0.000000, 0.000000) with beam gradiant (0.000000, 0.000000) Event Time = 0.013075 (ns)

TG4PrimaryGeneratorAction::TransformPrimaries:
G4ParticleTable::FindParticle() failed for XXX pdgEncoding=88881.
*** TG4Exception: Aborting execution ***

WARNING - Attempt to delete the physical volume store while geometry closed !
WARNING - Attempt to delete the logical volume store while geometry closed !
WARNING - Attempt to delete the solid store while geometry closed !
WARNING - Attempt to delete the region store while geometry closed !
Warning in <TStreamerInfo::Build:>: TStreamerBase: base class TStreamerElement has no streamer or dictionary it will not be saved
root [0]

Subject: Re: MC true match with geant4
Posted by StefanoSpataro on Fri, 01 Nov 2013 11:39:25 GMT
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This is an old and well known problem, and up to now I was not able to find a solution. Maybe there are some problems in our mcapplication, since the problem does not appear with g3, but up to know nothing was found. If you need to store the tree then you must use g3 for the moment.

Subject: Re: MC true match with geant4
Posted by StefanoSpataro on Tue, 12 Nov 2013 17:27:30 GMT
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Please try the following:

in your sim macro add the following lines after FairRunSim:

FairParticle *pbarp = new FairParticle(88888,"pbarpSystem",kPTUndefined,1.9,0,0);
fRun->AddNewParticle(pbarp);

You should see some warnings with G4, but the simulation does not crash. Most probably you need to do the same with your analysis macro.
Please tell me if it works and if the results are reasonable.

Subject: Re: MC true match with geant4
Posted by donghee on Fri, 15 Nov 2013 14:20:59 GMT
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Hi Stefano,

I tried to add new particle via FairParticle.
Upto sim->dig->rec->pid it works fine with Geant4,
but I cannot see anything about 88888 in the MCtrack list.

Best wishes,
Donghee

Subject: Re: MC true match with geant4
Posted by StefanoSpataro on Fri, 15 Nov 2013 15:41:18 GMT
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It seems there are problems in our MC application for g4, Mohammad will take a look.
