Subject: Reco error at Geant4 simulation
Posted by donghee on Thu, 31 Oct 2013 10:07:49 GMT
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Dear all,

I am trying to do a simulation with Geant4 using trunk(today morning version...)
Upto sim->dig should be fine.

At reconstruction, probably I have a trouble to load G4 library.
During the initialization of FairGeane::Init(), I have seen the message
"Loading Geant3 libraries ...", but I have used Geant4 for this simulation, why such messages are appeared?
And the end of reco process the simulation is crashed with following error.
Quote:
terminate called after throwing an instance of 'std::out_of_range'
  what(): vector::_M_range_check

What is this?

Here is the full output from reco session during simulation.
Quote:

root [0]
Processing run_offline3_rec.C("test_geant4", 5, 15, 5 , "dell")...
Error in <TClonesArray::SetClass>: called with a null pointer
FairRootManager::OpenOutFile("/home/kang/GSI/macro_online/data/test_geant4/data_5_rec.root ")
Info in (PndGeoHandling::Instance): Making a new instance using the framework.
[INFO   ] The input consists out of the following trees and files:
[INFO   ] - cbmsim
[INFO   ]   - /home/kang/GSI/macro_online/data/test_geant4/data_5_dig.root
[INFO   ] - FriendTree_1
[INFO   ]   - /home/kang/GSI/macro_online/data/test_geant4/data_5_sim.root
[INFO   ] Parameter and input file are available, Assure that basic info is there for the run!
[INFO   ] The number of entries in chain is 5

****
    initialisation for run id 1383213357
****
****
    initialisation for run id 1383213357
****
****
    initialisation for run id 1383213357
****

.....

----------FairGeane::Init ()----------

```
Loading Geant3 libraries ...
Loading Geant3 libraries ... finished

 MZSTOR.  ZEBRA table base TAB(0) in /MZCC/ at adr  1055673399    3EEC4C37 HEX

 MZSTOR.  Initialize Store  0  in /GCBANK/
        with Store/Table at absolute adrs  1055782645  1055673399
                                HEX    3EEDF6F5    3EEC4C37
                                HEX       1AB22           0
                        relative adrs      109346           0
        with     1 Str. in     2 Links in   5300 Low words in 4999970 words.
        This store has a fence of   16 words.

 MZLOGL.  Set Log Level 0 for store  0
1*****  GEANT Version  3.21/11 Released on 100298
0*****  Correction Cradle Version  0.1100

 MZDIV.   Initialize Division  Constant  in Store  0
        NW/NWMAX=   20004000000,  MODE/KIND=  1  2
        Division 20 initialized.

 MZLINK.  Initialize Link Area  /GCLINK/  for Store  0 NL/NS=    20    20

 MZLINK.  Initialize Link Area  /GCSLNK/  for Store  0 NL/NS=   100   100
-I- G3Config: Geant3 with TGeo has been created for Geane.
-I- Geane.C: NOPRNT flag set to 1
-I- Geane.C: IERR flags are not printed. If you want to switch them on, please set
fErtrio1->noprnt = 0 in Geane.C
Energy straggling area parameter from user set to: 0.999

 Calculating cross section tables, see gphysi.dat for more information

 Cross section calculation concluded successfully
I- FairGeane::FairGeane:  Geane is Initialized
-W- PndMvdRiemannTrackFinderTask::Init: No Branch Names given with
AddHitBranch(TString branchName)! Standard BranchNames taken!
-I- PndMvdRiemannTrackFinderTask: Initialisation successfull
-I- PndTrkTracking: Initialization successfull
-I- PndTrkTracking: Initialization successfull
-I- ------------------
-I- PndSttMvdGemTracking: using branches MVDHitsPixel MVDHitsStrip STTHit GEMHit
-I- to change one or more of these use PndSttMvdGemTracking:SetBranchName( TStrings );
the order of TStrings is mvd pixel name, mvd strip name, stt name, gem name
starting track for extrapolation SttMvdTrack SttMvdTrackCand
-I- ------------------
-I- PndSttMvdGemTracking: using default PDG -13
-I- PndSttMvdGemTracking: Intialisation successfull
-I- PndMCTrackAssociator::Init
[INFO   ]  Branch: STTHitMix  not found in Tree
[INFO   ]  Branch: STTHitMix  not found in Tree
-W- PndMCTrackAssociator::Init: Using STTHit array
[INFO   ]  Branch: MVDHitsStripMix  not found in Tree
```

```
[INFO   ]  Branch: MVDHitsStripMix  not found in Tree
-W- PndMCTrackAssociator::Init: Using MVDHitsStrip array
[INFO   ]  Branch: MVDHitsPixelMix  not found in Tree
[INFO   ]  Branch: MVDHitsPixelMix  not found in Tree
-W- PndMCTrackAssociator::Init: Using MVDHitsPixel
 -I- PndRecoKalmanTask:Init :: Using GeaneTrackRep
#####Mapper:filltubearray######
fGeoType=1
*** PndRecoKalmanFit::Init MVDHitsStrip array  found
*** PndRecoKalmanFit::Init MVDHitsPixel array  found
[INFO   ]  Branch: SttHelixHit  not found in Tree
[INFO   ]  Branch: SttHelixHit  not found in Tree
*** PndRecoKalmanFit::Init SttHit array  found
*** PndRecoKalmanFit::Init GEMHit array  found
*** PndRecoKalmanFit::Init MdtHit array  found
*** PndRecoKalmanFit::Init FtsHit array  found
===PndRecoKalmanFit::Init() finished
================================================
-I- PndMCTrackAssociator::Init
[INFO   ]  Branch: STTHitMix  not found in Tree
[INFO   ]  Branch: STTHitMix  not found in Tree
-W- PndMCTrackAssociator::Init: Using STTHit array
[INFO   ]  Branch: MVDHitsStripMix  not found in Tree
[INFO   ]  Branch: MVDHitsStripMix  not found in Tree
-W- PndMCTrackAssociator::Init: Using MVDHitsStrip array
[INFO   ]  Branch: MVDHitsPixelMix  not found in Tree
[INFO   ]  Branch: MVDHitsPixelMix  not found in Tree
-W- PndMCTrackAssociator::Init: Using MVDHitsPixel
Warning in <TDatabasePDG::TDatabasePDG>: object already instantiated
#####Mapper:filltubearray######
fGeoType=1
 -I- PndRecoKalmanTask:Init :: Using GeaneTrackRep
#####Mapper:filltubearray######
fGeoType=1
*** PndRecoKalmanFit::Init MVDHitsStrip array  found
*** PndRecoKalmanFit::Init MVDHitsPixel array  found
[INFO   ]  Branch: SttHelixHit  not found in Tree
[INFO   ]  Branch: SttHelixHit  not found in Tree
*** PndRecoKalmanFit::Init SttHit array  found
*** PndRecoKalmanFit::Init GEMHit array  found
*** PndRecoKalmanFit::Init MdtHit array  found
*** PndRecoKalmanFit::Init FtsHit array  found
===PndRecoKalmanFit::Init() finished
================================================
-I- PndMCTrackAssociator::Init
[INFO   ]  Branch: STTHitMix  not found in Tree
[INFO   ]  Branch: STTHitMix  not found in Tree
-W- PndMCTrackAssociator::Init: Using STTHit array
[INFO   ]  Branch: MVDHitsStripMix  not found in Tree
[INFO   ]  Branch: MVDHitsStripMix  not found in Tree
-W- PndMCTrackAssociator::Init: Using MVDHitsStrip array
[INFO   ]  Branch: MVDHitsPixelMix  not found in Tree
```

[INFO] Branch: MVDHitsPixelMix not found in Tree
-W- PndMCTrackAssociator::Init: Using MVDHitsPixel
[INFO] The number of entries in chain is 5
terminate called after throwing an instance of 'std::out_of_range'
what(): vector::_M_range_check

Subject: Re: Reco error at Geant4 simulation
Posted by StefanoSpataro on Fri, 01 Nov 2013 22:18:14 GMT
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The Geant3 message is normal, since we use geane which is based on geant3. This is independent from the simulation, then also if you use geant4 it is fine.
I have run a g4 simulation and I cannot see problems with the reco. Are you sure you did not mess something in your macros?
Could you please upload your macros, modified so that so that one can reproduce your problem?

Subject: Re: Reco error at Geant4 simulation
Posted by donghee on Sun, 03 Nov 2013 16:00:52 GMT
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Hi, Stefano

If I try this code with apr13 release PADNAroot version, then everything is fine. But with recent trunk version, I have still following error at reco part (rec.C).

Quote:
[INFO] The number of entries in chain is 5
terminate called after throwing an instance of 'std::out_of_range'
what(): vector::_M_range_check
root [0] your simulation is crashed!!!!!!!!!

In order to test and reproduce this error, copy all files to tmporal directory,
then load build panda by . ./config.sh
and finally just ./do_simulation.sh

Thank you for your help.
Donghee

File Attachments
1) run_offline3_sim.C, downloaded 538 times
2) run_offline3_dig.C, downloaded 525 times
3) run_offline3_rec.C, downloaded 529 times
4) run_offline3_pid.C, downloaded 529 times
5) do_simulation.sh, downloaded 463 times

Subject: Re: Reco error at Geant4 simulation
Posted by StefanoSpataro on Sun, 03 Nov 2013 17:35:34 GMT
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In my computer your reco macro crashes, but if I run the macro/run/reco_complete.C from the output of your sim+digi macros, it works.
I presume you have some problem in your reco macro, since it is different from the standard one I am not sure where the problem stays, maybe you should try to load the sim file and use the digi as friend (you do the opposite). Or take tha standard reco macro.

Subject: Re: Reco error at Geant4 simulation
Posted by donghee on Sun, 03 Nov 2013 20:17:18 GMT
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Hi Stefano

If I turn off Mvd Rieman in reco.C, simulation for Geant4 is fine.
Quote:
```
  PndMvdRiemannTrackFinderTask* mvdTrackFinder = new
PndMvdRiemannTrackFinderTask();
  mvdTrackFinder->SetVerbose(iVerbose);
  mvdTrackFinder->SetMaxDist(0.05);
  mvdTrackFinder->SetPersistence(kFALSE);
  fRun->AddTask(mvdTrackFinder);
```

Thank you for your kind debugging...
I would like to close this session.

Best wishes,
Donghee

Subject: Re: Reco error at Geant4 simulation
Posted by StefanoSpataro on Sun, 03 Nov 2013 20:20:09 GMT
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The mvdriemann is not in the deafult reco macros anymore. However, I suppose Tobias should check what is going wrong there.