Subject: Problem with PndSttHitProducerIdeal
Posted by Ralf Kliemt on Fri, 01 Feb 2008 12:15:04 GMT
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Hi all,

While trying this geane tutorial number 2 I encountered a problem with the PndSttHitProducerIdel. I worked around by using the real hitproducer, but this is really time consuming.

Here goes the report: Everything seems to be ok at the beginning.
Toggle Spoiler
Processing runDIGI2.C...

PSaid instance created... access via gSaid->f()

- RTDB container factory CbmBaseContFact
- RTDB container factory PndFieldContFact
- RTDB container factory PndPassiveContFact
- RTDB container factory PndSttContFact
- RTDB container factory CbmPlaneContFact
-I- CbmRunAna: Opening Input file: ex2.root

-I- CbmRunAna::Init :
ex2.root is connected with:

Info in <TGeoManager::CloseGeometry>: Geometry loaded from file...
Info in <TGeoManager::SetTopVolume>: Top volume is cave. Master volume is cave
Info in <TGeoManager::Voxelize>: Voxelizing...
Info in <TGeoNavigator::BuildCache>: --- Maximum geometry depth set to 100
Info in <TGeoManager::CloseGeometry>: 15949 nodes/ 2812 volume UID's in CBM geometry
Info in <TGeoManager::CloseGeometry>: ----------modeler ready----------
PndFieldCreator::SetParm()
create PndFieldPar container PndFieldPar
create PndFieldPar container PndSolenoidPar
create PndFieldPar container PndDipolePar
create PndFieldPar container PndTransPar
create PndFieldPar container PndConstPar
create PndFieldPar container PndMultiFieldPar

****
initialisation for run id 1163482620
****
Error in <CbmBaseParSet::init()>: CbmBaseParSet not initialized
Error in <PndFieldPar::init()>: PndFieldPar not initialized
Error in <PndSolenoidPar::init()>: PndSolenoidPar not initialized
Error in <PndDipolePar::init()>: PndDipolePar not initialized
Error in <PndTransPar::init()>: PndTransPar not initialized
Error in <PndConstPar::init()>: PndConstPar not initialized
Error in <PndMultiFieldPar::init()>: PndMultiFieldPar not initialized
Error in <CbmRuntimeDb::initContainers()>: Error occured during initialization
PndFieldCreator::createCbmField()

-I- PndSttHitProducerIdeal: Intialisation successfull

Then some events are processed and it breaks with this gdb output:
Toggle Spoiler
-I- PndSttHitProducerIdeal: 83 SttPoints, 83 Hits created.

Program received signal SIGFPE, Arithmetic exception.
[Switching to Thread -1226048736 (LWP 11088)]
0xb6dc94e7 in TStreamerInfo::WriteBufferAux<char**> (this=0x8beef70, b=@0xa48bee8, arr=@0xbf9be680, first=6, narr=83, eoffset=0, arrayMode=1)
    at io/src/TStreamerInfoWriteBuffer.cxx:188
188   case TStreamerInfo::kDouble + kHaveLoop: WriteBasicTypeLoop(Double_t); continue;
(gdb) bt
#0 0xb6dc94e7 in TStreamerInfo::WriteBufferAux<char**> (this=0x8beef70, b=@0xa48bee8, arr=@0xbf9be680, first=6, narr=83, eoffset=0, arrayMode=1)
    at io/src/TStreamerInfoWriteBuffer.cxx:188
#1 0xb6dc2357 in TStreamerInfo::WriteBufferClones (this=0x8beef70, b=@0xa48bee8, clones=0x8bc23c8, nc=83, first=6, eoffset=0) at io/src/TStreamerInfoWriteBuffer.cxx:788
#2 0xb5d5d908 in TBranchElement::FillLeaves (this=0xa49e720, b=@0xa48bee8) at tree/src/TBranchElement.cxx:1277
#3 0xb5d52b47 in TBranch::Fill (this=0xa49e720) at tree/src/TBranch.cxx:769
#4 0xb5d5dbb5 in TBranchElement::Fill (this=0xa49e720) at tree/src/TBranchElement.cxx:1043
#5 0xb5d5dd19 in TBranchElement::Fill (this=0x8bed848) at tree/src/TBranchElement.cxx:1068
#6 0xb5da2d35 in TTree::Fill (this=0x8bcc0b0) at tree/src/TTree.cxx:3186
#7 0xb304e35c in CbmRootManager::Fill (this=0x84b4428) at /home/ralfk/Pandaroot/pandaroot/base/CbmRootManager.cxx:344
#8 0xb3055141 in CbmRunAna::Run (this=0x84b42d8, Ev_start=0, Ev_end=1000) at /home/ralfk/Pandaroot/pandaroot/base/CbmRunAna.cxx:158
#9 0xb3095f84 in G__CbmDict_530_0_5 (result7=0xbf9ceecc, funcname=0x84b2818 "\001", libp=0xbf9c8b28, hash=0) at /home/ralfk/Pandaroot/build/base/CbmDict.cxx:9334
#10 0xb721b55b in Cint::G__ExceptionWrapper (funcp=0xb3095e9a <G__CbmDict_530_0_5>, result7=0xbf9ceecc, funcname=0x84b2818 "\001", libp=0xbf9c8b28, hash=0)
    at cint/src/Api.cxx:364
#11 0xb732a8a0 in G__call_cppfunc (result7=0xbf9ceecc, libp=0xbf9c8b28, ifunc=0x84b2818, ifn=0) at cint/src/v6_newlink.cxx:512
#12 0xb72f1f65 in G__interpret_func (result7=0xbf9ceecc, funcname=0xbf9ce8cc "Run", libp=0xbf9c8b28, hash=309, p_ifunc=0x84b2818, funcmatch=1, memfunc_flag=1)
    at cint/src/v6_ifunc.cxx:5118
#13 0xb72e1554 in G__getfunction (item=0xbf9d3336 "Run(0,nEvents)", known3=0xbf9d18fc, memfunc_flag=1) at cint/src/v6_func.cxx:2511
#14 0xb73b6090 in G__getstructmem (store_var_type=112, varname=0xbf9d11e8 "basiclibs", membername=0xbf9d3336 "Run(0,nEvents)", tagname=0xbf9d0fe8 "fRun",
    known2=0xbf9d18fc, varglobal=0xb745c3a0, objptr=2) at cint/src/v6_var.cxx:6562
#15 0xb73a8ffd in G__getvariable (item=0xbf9d3330 "fRun->Run(0,nEvents)", known2=0xbf9d18fc, varglobal=0xb745c3a0, varlocal=0x0) at cint/src/v6_var.cxx:5206
#16 0xb72af2b2 in G__getitem (item=0xbf9d3330 "fRun->Run(0,nEvents)") at cint/src/v6_expr.cxx:1884
#17 0xb72c2453 in G__getexpr (expression=0xbf9d396c "fRun->Run(0,nEvents)") at

```
cint/src/v6_expr.cxx:1470
#18 0xb733cd31 in G__exec_function (statement=0xbf9d396c "fRun->Run(0,nEvents)",
pc=0xbf9d4008, piout=0xbf9d4004, plargestep=0xbf9d3ffc, presult=0xbf9d3fb8)
    at cint/src/v6_parse.cxx:598
#19 0xb7343d6f in G__exec_statement (mparen=0xbf9daeb8) at cint/src/v6_parse.cxx:6923
#20 0xb7298000 in G__exec_tempfile_core (file=0xbf9dcfac
"/home/ralfk/Pandaroot/pandaroot/macro/geane/./runDIGI2.C", fp=0x0) at
cint/src/v6_debug.cxx:251
#21 0xb729833d in G__exec_tempfile (file=0xbf9dcfac
"/home/ralfk/Pandaroot/pandaroot/macro/geane/./runDIGI2.C") at cint/src/v6_debug.cxx:798
#22 0xb735615a in G__process_cmd (line=0xb7edf74d "_20", prompt=0x80cc994 "",
more=0x80cc98c, err=0xbf9dde68, rslt=0xbf9dde38) at cint/src/v6_pause.cxx:3070
#23 0xb79a80f9 in TCint::ProcessLine (this=0x80cc970, line=0xb7edf74d "_20",
error=0xbf9e0674) at meta/src/TCint.cxx:289
#24 0xb79a25bc in TCint::ProcessLineSynch (this=0x80cc970, line=0xb7edf74d "_20",
error=0xbf9e0674) at meta/src/TCint.cxx:354
#25 0xb78ea532 in TApplication::ExecuteFile (file=0xbf9de59d "runDIGI2.C",
error=0xbf9e0674) at base/src/TApplication.cxx:898
#26 0xb78ea704 in TApplication::ProcessFile (this=0x80eae90, file=0xbf9de59d "runDIGI2.C",
error=0xbf9e0674) at base/src/TApplication.cxx:787
#27 0xb78ecaeb in TApplication::ProcessLine (this=0x80eae90, line=0xbf9de59a ".x
runDIGI2.C", sync=false, err=0xbf9e0674) at base/src/TApplication.cxx:760
#28 0xb718c9de in TRint::Run (this=0x80eae90, retrn=false) at rint/src/TRint.cxx:336
#29 0x08048e49 in main (argc=1, argv=0xbf9e0784) at main/src/rmain.cxx:29
(gdb) list
183             case TStreamerInfo::kShort   + kHaveLoop: WriteBasicTypeLoop(Short_t);
continue;
184             case TStreamerInfo::kInt     + kHaveLoop: WriteBasicTypeLoop(Int_t);     continue;
185             case TStreamerInfo::kLong    + kHaveLoop: WriteBasicTypeLoop(Long_t);
continue;
186             case TStreamerInfo::kLong64  + kHaveLoop: WriteBasicTypeLoop(Long64_t);
continue;
187             case TStreamerInfo::kFloat   + kHaveLoop: WriteBasicTypeLoop(Float_t);
continue;
188             case TStreamerInfo::kDouble  + kHaveLoop: WriteBasicTypeLoop(Double_t);
continue;
189             case TStreamerInfo::kUChar   + kHaveLoop: WriteBasicTypeLoop(UChar_t);
continue;
190             case TStreamerInfo::kUShort  + kHaveLoop: WriteBasicTypeLoop(UShort_t);
continue;
191             case TStreamerInfo::kUInt    + kHaveLoop: WriteBasicTypeLoop(UInt_t);
continue;
192             case TStreamerInfo::kULong   + kHaveLoop: WriteBasicTypeLoop(ULong_t);
continue;
(gdb)
```

So something goes wrong maybe even inside root?
Ideas/workarounds?

Greetings from Dresden and have a nice weekend,
Ralf.

Edit:
I tried it with 10 events and it succeeded - maybe it has to do with a memory leak?
Ralf.

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by asanchez on Fri, 01 Feb 2008 12:48:03 GMT
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Hi Ralf, here from gsi,
it is running properly.

I don't get any crash by running the
ex2.

Maybe you are right and the problem is due to
root version???.

best regards
alicia.

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by Aleksandra Biegun on Fri, 01 Feb 2008 13:06:17 GMT
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Hi,

for me is the same situation like for Ralf and Alicia, i.e. indeed, at gsi, I don't have any problems with running all scripts
with GEANE (ex2), but at my computer runDIGI2.C macro crashed when I use PndSttHitProducerIdel.*
(the same problem as Ralf) and with the PndSttHitProducerReal.* hit producer works (but very slowly) and next scripts:
runRECO2.C and runPULL2.C work fine.

Best regards and have a nice weekend,
Ola.

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by Lia Lavezzi on Fri, 01 Feb 2008 13:23:16 GMT
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Hi all,
what kind of events are you simulating? Which particle, momentum, theta and phi angles? And how many events and track per event? I can try to simulate and digitize the same events and see what happens (I never saw such an error in STT...)

You could also try to change the seed in the runMC2.C macro
gRandom->SetSeed(12345)
and resimulate the events to see if it happens again...

Please let me know, ciao,
Lia.

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by Aleksandra Biegun on Fri, 01 Feb 2008 14:06:19 GMT
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Hi Lia,

adding a seed number helped
and now, everything is working fine,
also next macra.

Thanks a lot!

Best wishes and have a nice evening,
Ola.

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by StefanoSpataro on Fri, 01 Feb 2008 14:11:18 GMT
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Well,
in each case there is still a problem somewhere, that does not appear by using a precise seed number...

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by Lia Lavezzi on Fri, 01 Feb 2008 14:34:05 GMT
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Hi Ola and Stefano,
nice to hear that it works now, but Stefano is right: there is still something to be fixed.

I can try to reproduce the error if you tell me exactly what to simulate (maybe you can post your runMC2 macro) and if you could tell me also the seed you used... I' m afraid however that using a different machine will prevent me to reproduce exactly the same simulated events,

even using the same seed in input, but we can try!

Nice week end also to you all,
Lia.

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by Aleksandra Biegun on Fri, 01 Feb 2008 14:47:25 GMT
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Hi Lia,

I used exactly what is at svn (rev.2137), i.e.

- geometry: straws_skewed_blocks.geo
- momentum: 1.5 Gev
- theta: 0-180 deg
- phi : 0-360 deg
- magnetic field: SetField(0.,0.,20)
SetFieldRegion(-150,150,-150,150,-250,250)
- nEvents: 1000
- TGeant3
- seed number: 12345 (like you wrote)

And, that's it.

As I mentioned, at gsi it works for me without any problem,
so maybe, indeed, you could not reproduce my problem,
but if you will try, would be nice, thanks.

Best wishes,
Ola.

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by Ralf Kliemt on Mon, 04 Feb 2008 14:27:52 GMT
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Hello all,

I tried it with setting the random seed, too and this works. I have no clue why this happens. When I put the random seed for the runMC2.C to the value you have at the MC output (it's 4357), I have the same effect - the ideal reco crashes at event 175.

Ciao, Ralf.

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by Lia Lavezzi on Mon, 04 Feb 2008 16:32:20 GMT
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Hi Ralf,
I tried to reproduce the error, but with no success (even with the same seed...). So there are two hypothesis: 1) my computer/compiler finds the bug but "ignores" it and proceeds, 2) the bug is linked to a rare event and since we have different machines the simulations, even starting from the same seed, are different and I don' t find that event.

I would ask you if you can send me your simulated root file (ex2.root), so that I can digitize it and see which is our case: if we are in case 1 I don' t know what to do at present (I will look if I can try it on another machine, with an older linux version), if we are in case 2 maybe I will be able to see the error (let' s hope this is our case)

Ciao,
Lia.

Subject: Re: Problem with PndSttHitProducerIdeal
Posted by Lia Lavezzi on Thu, 07 Feb 2008 09:27:41 GMT
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Hi all,
I have been able (finally) to reproduce the error on another computer, and I see the crash at event 175 like you Ralf (I used your simulated file).
I tried to understand the bug source: in the hit producer two TClonesArray (fHitArray and fHitInfoArray) are created and registered to output; I saw that commenting out one of the two lines where the "new" is called, I mean:
the line: hit = new ((*fHitArray)[counter]) PndSttHit(detID, pos, dpos, iPoint, 0, closestDistance, closestDistanceError, wireDirection);
or the line: new ((*fHitInfoArray)[counter]) PndSttHitInfo(0, 0, trackID, iPoint, 0, kFALSE);
the bug disappears, but actually I don' t know what does this mean, does anyone have any idea?
It should not be due to a memory leak (I have been able to digitize an event with 170 hits, so 83 should not create problems), but I don' t know...
I checked the code, but I can' t find the actual error
So this is my idea: I would suggest to wait and see if the bug will appear again with a future ROOT version (when we will update it: maybe it is connected with this version and it will disappear (I really hope so).
For the moment let' s keep the workaround of the seed changing. What do you think?
Ciao,
Lia.