Subject: genfit tracking with GEANE not working since geometry update
Posted by Felix Boehmer on Tue, 29 Sep 2009 09:40:01 GMT
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Dear Mohammad,

since you moved the geometry from the data to the parameter files, genfit tracking using GEANE is no longer working for me (as you already hinted in your post...). The initialisation of FairGeanePro fails.
This is a problem, since at the moment only downgrading helps.

Kind regards

Felix

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by Mohammad Al-Turany on Tue, 29 Sep 2009 10:33:48 GMT
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Hi Felix,

Sorry for this, I should have wrote more about it anyway take a look to the macro/qa/run_reco_tpccombi.C to see how the initialization works now, Geane is meanwhile a task and it should be added to the run.

please try it and let me know.

regards

Mohammad

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by Mohammad Al-Turany on Tue, 29 Sep 2009 10:35:29 GMT
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Hi again,

it is in macro/qa/lhetrack/run_reco_tpccombi.C

Mohammad

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by StefanoSpataro on Tue, 29 Sep 2009 12:33:53 GMT
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Hi,

I have tried the code in macro/qa/lhetrack/run_reco_tpccombi.C, and it runs. But I have seen the following message:

-I- Geometry was not found in the input file we will look in the friends if any!

Moreover, when turning on kalman in the macro (i.e. using the macros in macro/pid with the corrections), I can see there are almost no differencies between lhe and genfit, maybe genfit is worse than lhe!! For this reason I fear that geane is not taking correctly the magnetic field/geoemtry.

I have also run the pid macro, same folder, and the correlation is completely screwed. Geane is doing something wrong.

Therefore, probably there is still something to fix.

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by Felix Boehmer on Tue, 29 Sep 2009 12:46:52 GMT
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Dear Mohammad,

thaks you for the fast reply.

I will try this and give you feedback, however I don't think I can do this within the next two days. In any case, I will let you know.

Cheers,

Felix

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by Felix Boehmer on Thu, 01 Oct 2009 09:35:13 GMT
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Hello again,

I've tried the new method in my reco macro, but unfortunately it does not work.

I initialize Geane as a task:

```
// -----   Digitization run   ----------------------------------------
  FairRunAna *fRun= new FairRunAna();
  fRun->SetInputFile(inFile);

  fRun->AddFriend(mcFile);
```

```
  fRun->SetOutputFile(outFile);

  FairGeane *Geane = new FairGeane();
  fRun->AddTask(Geane);
  std::cout<<"\nGEANE initialized"<<std::endl;
```

but I get a seg-fault before the cout is reached:

```
----------------------FairGeane::Init ()-----------------------------
Loading Geant3 libraries ...
Loading Geant3 libraries ... finished

 MZSTOR.  ZEBRA table base TAB(0) in /MZCC/ at adr   736816599    2BEAEDD7 HEX

 MZSTOR.  Initialize Store  0  in /GCBANK/
        with Store/Table at absolute adrs   736925941   736816599
                                HEX    2BEC98F5    2BEAEDD7
                                HEX       1A72A           0
                        relative adrs      108330           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.
Energy straggling area parameter from user set to: 0.999
SetCuts Macro: Setting Processes..
SetCuts Macro: Setting cuts..

Program received signal SIGSEGV, Segmentation fault.
[Switching to Thread 0xb6afc6c0 (LWP 13038)]
0xb647bcfa in TGeoManager::GetListOfVolumes (this=0x0) at include/TGeoManager.h:432
432    TObjArray            *GetListOfVolumes() const      {return fVolumes;}
(gdb) where
#0  0xb647bcfa in TGeoManager::GetListOfVolumes (this=0x0) at
include/TGeoManager.h:432
#1  0xaf7ee7ca in TGeant3TGeo::FinishGeometry (this=0xa8cbd70) at
TGeant3/TGeant3TGeo.cxx:2091
#2  0xaf7e7073 in TGeant3::Init (this=0xa8cbd70) at TGeant3/TGeant3.cxx:6214
#3  0xb3dd478e in FairMCApplication::InitMC (this=0xa85fd70, setup=0xa860088
"/home/felix/simulation/trunk/gconfig/Geane.C", cuts=0xb1c91ee0 "")
    at /home/felix/simulation/trunk/base/FairMCApplication.cxx:212
```

#4 0xb1c78904 in FairGeane::Init (this=0xa85fca0) at
/home/felix/simulation/trunk/geane/FairGeane.cxx:122
#5 0xb1c78c19 in FairGeane (this=0xa85fca0, UserConfig=
    {_vptr.TString = 0xbfe7b2e8, static fgInitialCapac = 15, static fgResizeInc = 16, static
fgFreeboard = 15, fData = 0xbfe7b2e0

UserCuts=
    {_vptr.TString = 0xbfe7b2e0, static fgInitialCapac = 15, static fgResizeInc = 16, static
fgFreeboard = 15, fData = 0x6d614e54 <Address 0x6d614e54 out of bounds>, static fgIsA =
0xa6f4588}) at /home/felix/simulation/trunk/geane/FairGeane.cxx:47
#6 0xb1c8decb in G__GeaneDict_172_0_2 (result7=0xbfe871c4, funcname=0xa780658
"\001", libp=0xbfe7cb58, hash=0) at /home/felix/simulation/build/geane/GeaneDict.cxx:415
#7 0xb7092c1b in Cint::G__ExceptionWrapper (funcp=0xb1c8d25b
<G__GeaneDict_172_0_2>, result7=0xbfe871c4, funcname=0xa780658 "\001",
libp=0xbfe7cb58, hash=0)
    at cint/cint/src/Api.cxx:384
#8 0xb71781f2 in G__execute_call (result7=0xbfe871c4, libp=0xbfe7cb58, ifunc=0xa780658,
ifn=0) at cint/cint/src/newlink.cxx:2329
#9 0xb71801fc in G__call_cppfunc (result7=0xbfe871c4, libp=0xbfe7cb58, ifunc=0xa780658,
ifn=0) at cint/cint/src/newlink.cxx:2515
#10 0xb713a75a in G__interpret_func (result7=0xbfe871c4, funcname=0xbfe8829c
"FairGeane", libp=0xbfe7cb58, hash=866, p_ifunc=0xa780658, funcmatch=1,
memfunc_flag=3)
    at cint/cint/src/ifunc.cxx:5278
#11 0xb71253b7 in G__getfunction (item=0xbfe932ec "FairGeane()", known3=0xbfe932c4,
memfunc_flag=3) at cint/cint/src/func.cxx:2534
#12 0xb715ef8f in G__new_operator (expression=0xbfe96dc0 "FairGeane") at
cint/cint/src/new.cxx:410
#13 0xb70f550d in G__getexpr (expression=0xbfe96dbc "new FairGeane") at
cint/cint/src/expr.cxx:1191
#14 0xb70e4ed8 in G__define_var (tagnum=3918, typenum=-1) at cint/cint/src/decl.cxx:2583
#15 0xb7192377 in G__defined_type (type_name=0xbfe990cc "FairGeane", len=9) at
cint/cint/src/parse.cxx:4446
#16 0xb7198750 in G__exec_statement (mparen=0xbfea05a8) at cint/cint/src/parse.cxx:6414
#17 0xb70dbc30 in G__exec_tempfile_core (file=0xbfea1e7c
"/home/felix/simulation/trunk/./DATA/dEdx/pion_500MeV_unif_angle/runReco.C", fp=0x0)
    at cint/cint/src/debug.cxx:251
#18 0xb70dc019 in G__exec_tempfile (file=0xbfea1e7c
"/home/felix/simulation/trunk/./DATA/dEdx/pion_500MeV_unif_angle/runReco.C") at
cint/cint/src/debug.cxx:798
#19 0xb71add11 in G__process_cmd (line=0x9f13178 ".X
/home/felix/simulation/fairsoft/tools/root/etc/plugins/TVirtualStreamerInfo/P010_TStreamerInfo.
C",
    prompt=0x9ee542c "", more=0x9ee5424, err=0xbfea47e0, rslt=0xbfea47ac) at
cint/cint/src/pause.cxx:3089
#20 0xb7a12fc2 in TCint::ProcessLine (this=0x9ee5408,
    line=0x9f13178 ".X
/home/felix/simulation/fairsoft/tools/root/etc/plugins/TVirtualStreamerInfo/P010_TStreamerInfo.
C", error=0xbfea4f6c)
    at core/meta/src/TCint.cxx:413
---Type <return> to continue, or q <return> to quit---
#21 0xb7a094ba in TCint::ProcessLineSynch (this=0x9ee5408,

line=0x9f13178 ".X
/home/felix/simulation/fairsoft/tools/root/etc/plugins/TVirtualStreamerInfo/P010_TStreamerInfo.
C", error=0xbfea4f6c)
at core/meta/src/TCint.cxx:480
#22 0xb7904f1d in TApplication::ExecuteFile (file=0xbfea4f79
"DATA/dEdx/pion_500MeV_unif_angle/runReco.C", error=0xbfea4f6c, keep=false)
at core/base/src/TApplication.cxx:956
#23 0xb790513c in TApplication::ProcessFile (this=0x9f108a8, file=0xbfea4f79
"DATA/dEdx/pion_500MeV_unif_angle/runReco.C", error=0xbfea4f6c, keep=false)
at core/base/src/TApplication.cxx:841
#24 0xb7907a30 in TApplication::ProcessLine (this=0x9f108a8, line=0xbfea4f76 ".x
DATA/dEdx/pion_500MeV_unif_angle/runReco.C", sync=false, err=0xbfea4f6c)
at core/base/src/TApplication.cxx:814
#25 0xb6df3a16 in TRint::Run (this=0x9f108a8, retrn=false) at core/rint/src/TRint.cxx:368
#26 0x08048f47 in main (argc=1, argv=0xbfea70a4) at main/src/rmain.cxx:29
(gdb)

At first glance I would guess this has something to do with the cuts and config files? The error seems to occur in the line

fApp->InitMC(ConfigMacro.Data(), "");

of the Init() method of FairGeane.

For my simulation runs I use custom SetCuts.C and g3Config.C. I tried the FairGeane(TString, TString) constructor that takes custom config files as well, but this gives another error. The config files from the repository are of course present in trunk/gconfig.

Cheers,

Felix

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by Ralf Kliemt on Thu, 01 Oct 2009 09:41:53 GMT
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Hello Felix.

Quote:#0 0xb647bcfa in TGeoManager::GetListOfVolumes (this=0x0) at
include/TGeoManager.h:432
The gGeoManager is not present.

The geometry moved. It is no longer in the simulation file, but rather in the root parameter file. You need to load it as well as you need to initialize the run. E.g:

```
FairRunAna *fRun= new FairRunAna();
```

```
  fRun->SetInputFile(inSimuFile);
  fRun->AddFriend(inDigiFile);
  fRun->AddFriend(inRecoFile);
  fRun->SetOutputFile(outFile.Data());

  FairGeane *Geane = new FairGeane();
  fRun->AddTask(Geane);
  FairRuntimeDb* rtdb = fRun->GetRuntimeDb();
  FairParRootFileIo* parIO = new FairParRootFileIo();
  parIO->open(parFile.Data());

  rtdb->setFirstInput(parIO);
  rtdb->setOutput(parIO);

//...

  fRun->Init();
  PndEmcMapper *emcMap = PndEmcMapper::Instance(2,inSimuFile);
  Geane->SetField(fRun->GetField());

  fRun->Run(0,nEvents);
```

Cheers, Ralf.

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by Felix Boehmer on Fri, 02 Oct 2009 10:00:49 GMT
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thanks Ralf,

indeed wrong parameter loading was the problem. Luckily I now have another problem... I will eventually make another post about this.

Regards

Felix

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by Felix Boehmer on Tue, 06 Oct 2009 12:04:55 GMT
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Hello guys,

just now I finally had time to try and get the reco working again. Unfortunately, I still don't get GEANE to run in the current trunk version (6675).

I have no consistent picture of how to use it, when to initialize the GEANE task (doing it like

you posted here does not work for me) and how to treat the geometry (is LoadGeometry necessary or not?)

I working macro with GEANE tracking would help a lot. Unfortunately, in the macro/qa/lhetrack folder the run_sim macro crashes, so I can't test and validate the reco macro there:

.....

```
 ====== EMC::  ConstructRootGeometry() m3a ===
 ============================================
File name = /home/felix/simulation/trunk/geometry/emc_module3new.root
You do not provide a ROOT file

 =======  DRC::  ConstructGeometry()  ========
 ============================================
 DIRC min. radius = 50.35
 DIRC max. radius = 53.0364
sob_shift   = -150
sob_radius2 = 104.012
Info in <TGeoManager::CheckGeometry>: Fixing runtime shapes...
Info in <TGeoManager::CheckGeometry>: ...Nothing to fix
Info in <TGeoManager::CloseGeometry>: Counting nodes...
Info in <TGeoManager::Voxelize>: Voxelizing...
Info in <TGeoManager::CloseGeometry>: Building cache...
Info in <TGeoNavigator::BuildCache>: --- Maximum geometry depth set to 100
Info in <TGeoManager::CloseGeometry>: 464464 nodes/ 1436 volume UID's in FAIR geometry
Info in <TGeoManager::CloseGeometry>: ----------------modeler ready----------------
FairMCApplication::ConstructGeometry() : Now closing the geometry
Warning in <TGeoManager::CloseGeometry>: geometry already closed
 -I- Initializing PndMvdDetector()
 -I- PndDrc: Switching OFF Cherenkov Propagation
 -I- PndDrc: Intialization successfull
 -I- FairMCApplication ->  simulation RunID:  868617750

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

 Cross section calculation concluded successfully
 -I- FairMCApplication:: Monte carlo Engine Initialisation  with TGeant3TGeo
create PndFieldPar container PndMultiFieldPar
create PndFieldPar container PndTransPar
create PndFieldPar container PndDipole1Par
create PndFieldPar container PndDipole2Par
create PndFieldPar container PndSolenoid1Par
create PndFieldPar container PndSolenoid2Par
create PndFieldPar container PndSolenoid3Par
create PndFieldPar container PndSolenoid4Par
```

Program received signal SIGSEGV, Segmentation fault.
[Switching to Thread 0xb6bb46c0 (LWP 2847)]
0xb7fb0266 in vtable for TString () from
/home/felix/simulation/fairsoft/tools/root/lib/libCore.so.5.24
(gdb) where
#0 0xb7fb0266 in vtable for TString () from
/home/felix/simulation/fairsoft/tools/root/lib/libCore.so.5.24
#1 0xb3c74154 in ?? () from /home/felix/simulation/build/lib/libField.so
#2 0xb714ac1b in Cint::G__ExceptionWrapper (funcp=0xb3c615ca <G__FieldDict_190_0_5>,
result7=0xbfd40de4, funcname=0xcd53b08 "\001", libp=0xbfd36778,
    hash=0) at cint/cint/src/Api.cxx:384
#3 0xb72301f2 in G__execute_call (result7=0xbfd40de4, libp=0xbfd36778, ifunc=0xcd53b08,
ifn=0) at cint/cint/src/newlink.cxx:2329
#4 0xb72381fc in G__call_cppfunc (result7=0xbfd40de4, libp=0xbfd36778, ifunc=0xcd53b08,
ifn=0) at cint/cint/src/newlink.cxx:2515
#5 0xb71f275a in G__interpret_func (result7=0xbfd40de4, funcname=0xbfd41ebc
"SetParameters", libp=0xbfd36778, hash=1344, p_ifunc=0xcd53b08,
    funcmatch=1, memfunc_flag=1) at cint/cint/src/ifunc.cxx:5278
#6 0xb71dd3b7 in G__getfunction (item=0xbfd4840d "SetParameters(fField)",
known3=0xbfd46758, memfunc_flag=1) at cint/cint/src/func.cxx:2534
#7 0xb72e6936 in G__getstructmem (store_var_type=112, varname=0xbfd45a5c "",
membername=0xbfd4840d "SetParameters(fField)",
    tagname=0xbfd4625c "Par", known2=0xbfd46758, varglobal=0xb73a3200, objptr=2) at
cint/cint/src/var.cxx:6695
#8 0xb72d6fcc in G__getvariable (item=0xbfd48408 "Par->SetParameters(fField)",
known=0xbfd46758, varglobal=0xb73a3200, varlocal=0xbfd4a768)
    at cint/cint/src/var.cxx:5324
#9 0xb71abe64 in G__getitem (item=0xbfd48408 "Par->SetParameters(fField)") at
cint/cint/src/expr.cxx:1884
#10 0xb71bfdb1 in G__getexpr (expression=0xbfd487ec "Par->SetParameters(fField)") at
cint/cint/src/expr.cxx:1470
#11 0xb724ac6b in G__exec_function (statement=0xbfd487ec "Par->SetParameters(fField)",
pc=0xbfd487e8, piout=0xbfd487e0, plargestep=0xbfd487d0,
    presult=0xbfd486dc) at cint/cint/src/parse.cxx:601
#12 0xb7252f4e in G__exec_statement (mparen=0xbfd495a0) at cint/cint/src/parse.cxx:7015
#13 0xb725abe2 in G__exec_if () at cint/cint/src/parse.cxx:1353
#14 0xb72529b1 in G__exec_statement (mparen=0xbfd4a98c) at cint/cint/src/parse.cxx:6930
#15 0xb71f5844 in G__interpret_func (result7=0xbfd555c4, funcname=0xbfd5669c
"run_sim_tpccombi_pgun", libp=0xbfd4af58, hash=2246, p_ifunc=0x9f41b08,
    funcmatch=1, memfunc_flag=0) at cint/cint/src/ifunc.cxx:6113
#16 0xb71de14a in G__getfunction (item=0xbfd58c48
"run_sim_tpccombi_pgun(100,211,0.5,-1)", known3=0xbfd56f98, memfunc_flag=0)
---Type <return> to continue, or q <return> to quit---
    at cint/cint/src/func.cxx:2745
#17 0xb71abfb0 in G__getitem (item=0xbfd58c48 "run_sim_tpccombi_pgun(100,211,0.5,-1)")
at cint/cint/src/expr.cxx:1896
#18 0xb71bfdb1 in G__getexpr (expression=0x9f56a68
"run_sim_tpccombi_pgun(100,211,0.5,-1)") at cint/cint/src/expr.cxx:1470
#19 0xb71c0cf1 in G__calc_internal (exprwithspace=0xbfd59d2c
"run_sim_tpccombi_pgun(100,211,0.5,-1)") at cint/cint/src/expr.cxx:1061
#20 0xb726261c in G__process_cmd (
    line=0x98e11b8 ".X

/home/felix/simulation/fairsoft/tools/root/etc/plugins/TVirtualStreamerInfo/P010_TStreamerInfo.C", prompt=0x98b342c "",
    more=0x98b3424, err=0xbfd5c690, rslt=0xbfd5c65c) at cint/cint/src/pause.cxx:2240
#21 0xb7acafc2 in TCint::ProcessLine (this=0x98b3408,
    line=0x98e11b8 ".X /home/felix/simulation/fairsoft/tools/root/etc/plugins/TVirtualStreamerInfo/P010_TStreamerInfo.C", error=0xbfd5ce1c)
    at core/meta/src/TCint.cxx:413
#22 0xb7ac14ba in TCint::ProcessLineSynch (this=0x98b3408,
    line=0x98e11b8 ".X /home/felix/simulation/fairsoft/tools/root/etc/plugins/TVirtualStreamerInfo/P010_TStreamerInfo.C", error=0xbfd5ce1c)
    at core/meta/src/TCint.cxx:480
#23 0xb79bcf1d in TApplication::ExecuteFile (file=0xbfd5ce29
"macro/qa/lhetrack/run_sim_tpccombi_pgun.C(100,211,0.5,-1)", error=0xbfd5ce1c,
    keep=false) at core/base/src/TApplication.cxx:956
#24 0xb79bd13c in TApplication::ProcessFile (this=0x98de8a8, file=0xbfd5ce29
"macro/qa/lhetrack/run_sim_tpccombi_pgun.C(100,211,0.5,-1)",
    error=0xbfd5ce1c, keep=false) at core/base/src/TApplication.cxx:841
#25 0xb79bfa30 in TApplication::ProcessLine (this=0x98de8a8, line=0xbfd5ce26 ".x macro/qa/lhetrack/run_sim_tpccombi_pgun.C(100,211,0.5,-1)",
    sync=false, err=0xbfd5ce1c) at core/base/src/TApplication.cxx:814
#26 0xb6eaba16 in TRint::Run (this=0x98de8a8, retrn=false) at core/rint/src/TRint.cxx:368
#27 0x08048f47 in main (argc=1, argv=0xbfd5ef54) at main/src/rmain.cxx:29

Cheers,

Felix

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by Mohammad Al-Turany on Tue, 06 Oct 2009 12:16:59 GMT
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Hi Felix,

Geane is now a task, there is no need that you initialize it yourself, it will be initialized by the framework, you just need to create it and add it with AddTask to the run.

The LoadGeometry is not needed any more, the Geometry will be taken from the prameter file and also the field.

Take a look to the macro/pid there it works!

about your crash: are you sure that your repository is up to date, can you call svn status -u in your pandaroot directory to be sure that you do not have any conflicts in base or filed directories and they are up to date.

also you can try to delete the parameter file in your macro directory and try if you get the same

crash.

Mohammad

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by StefanoSpataro on Tue, 06 Oct 2009 13:09:18 GMT
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Hi,
in theory macro/pid/run_reco_tpccombi.C should work.

Subject: Re: genfit tracking with GEANE not working since geometry update
Posted by Felix Boehmer on Tue, 06 Oct 2009 13:24:22 GMT
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Dear Mohammad,

thanks for the help!
As always, it was a mixture of many things. Anyway, it works now!

Kind Regards,

Felix
