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Subject: Crash in genfit/geane  
Posted by [StefanoSpataro](#) on Thu, 27 Aug 2009 12:21:00 GMT  
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Hello,  
I wanted to reconstruct some tracks using lhetrack+genfit, using TPC+MVD.  
I have run the macros in macro/pid, exactly:

```
root run_sim_tpccombi_pgun.C"(500,13,1)"
root run_digi_tpccombi.C
root run_reco_tpccombi.C
```

and after a while I get a crash coming from the kalman.  
I have modified a bit the class PndLheKalmanTask.cxx in order to have some cout, and this is the error output:

Toggle Spoiler

```
*** Event # 307
===== PndLheHitsMaker =====
Total number of hits for tracking: 6
Total number of tracks in TPC: 1
    Good tracks in TPC: 1
Working with 6 hits
found 1 tracks
finder : Real Time = 32.80 seconds Cpu Time = 21.66 seconds
===== PndLheTrackFitter =====
Number of tracks for fitting 1
PndLheKalmanTask::Exec
-I- PndLheKalmanTask: contains 1 Tracks.
starting track0
TVector3 A 3D physics vector (x,y,z)=(0.267173,1.618713,2.636418)
(rho,theta,phi)=(3.105207,31.893551,80.627678)
TVector3 A 3D physics vector (x,y,z)=(0.093364,0.606249,0.979436)
(rho,theta,phi)=(1.155660,32.057903,81.245092)
TVector3 A 3D physics vector (x,y,z)=(0.500000,0.500000,0.500000)
(rho,theta,phi)=(0.866025,54.735610,45.000000)
TVector3 A 3D physics vector (x,y,z)=(0.009336,0.060625,0.097944)
(rho,theta,phi)=(0.115566,32.057903,81.245092)
charge: -1.000
-I- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit*) called.
PndMvdHit in 1_1/27_0/108_1/107_2/106_1/89_5/86_1/85_1/ at
(0.2615, 1.620, 2.630) cm with 2.238e+04 e, Cluster No. 0, mc point id = 0
hit.GetClusterIndex() 0
hit.GetBotIndex() -1
hit.GetRefIndex() 0

Detector path:
/cave_1/MVD-1.0oPv-1.0oSv-1.0_0/Pv-1_1/PixeloHshellov2_2/PixeloSdk-v2-NE
W_1/PixeloModo4x2_5/PixelActiveo4x2oPartAss_1/PixelActiveo4x2_1
-I- PndMvdRecoHit::PndMvdRecoHit: Wrote a hit with
(x,y) = (-0.9550,0.8103).
```

(dx,dy) = (0.002887,0.002887). not used: dz=0.005774  
-l- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit\*) called.  
PndMvdHit in 1\_1/27\_0/108\_1/107\_2/106\_2/89\_5/86\_1/85\_1/ at  
(0.3952, 2.548, 4.130) cm with 1.660e+04 e, Cluster No. 1, mc point id = 1  
hit.GetClusterIndex() 1  
hit.GetBotIndex() -1  
hit.GetRefIndex() 1

Detector path:  
/cave\_1/MVD-1.0oPv-1.0oSv-1.0\_0/Pv-1\_1/PixeloHshellov2\_2/PixeloSdk-v2-NE  
W\_2/PixeloModo4x2\_5/PixelActiveo4x2oPartAss\_1/PixelActiveo4x2\_1  
-l- PndMvdRecoHit::PndMvdRecoHit: Wrote a hit with  
(x,y) = (-1.089,-0.1176).  
(dx,dy) = (0.002887,0.002887). not used: dz=0.005774  
-l- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit\*) called.  
PndMvdHit in 1\_1/27\_0/108\_1/107\_1/103\_1/83\_4/80\_1/79\_1/ at  
(0.6450, 4.413, 7.140) cm with 2.190e+04 e, Cluster No. 2, mc point id = 2  
hit.GetClusterIndex() 2  
hit.GetBotIndex() -1  
hit.GetRefIndex() 2

Detector path:  
/cave\_1/MVD-1.0oPv-1.0oSv-1.0\_0/Pv-1\_1/PixeloHshellov2\_1/PixeloMdkov1-NE  
W\_1/PixeloModo6x2\_4/PixelActiveo6x2oPartAss\_1/PixelActiveo6x2\_1  
-l- PndMvdRecoHit::PndMvdRecoHit: Wrote a hit with  
(x,y) = (-0.09268,-0.6450).  
(dx,dy) = (0.002887,0.002887). not used: dz=0.005774  
-l- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit\*) called.  
PndMvdHit in 1\_1/27\_0/108\_1/107\_1/103\_2/83\_4/80\_1/79\_1/ at  
(0.8550, 6.184, 9.990) cm with 1.804e+04 e, Cluster No. 3, mc point id = 3  
hit.GetClusterIndex() 3  
hit.GetBotIndex() -1  
hit.GetRefIndex() 3

Detector path:  
/cave\_1/MVD-1.0oPv-1.0oSv-1.0\_0/Pv-1\_1/PixeloHshellov2\_1/PixeloMdkov1-NE  
W\_2/PixeloModo6x2\_4/PixelActiveo6x2oPartAss\_1/PixelActiveo6x2\_1  
-l- PndMvdRecoHit::PndMvdRecoHit: Wrote a hit with  
(x,y) = (-1.864,-0.8550).  
(dx,dy) = (0.002887,0.002887). not used: dz=0.005774  
-l- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit\*) called.  
PndMvdHit in 1\_1/27\_0/53\_1/34\_1/33\_1/32\_6/31\_2/30\_1/29\_1/28\_1/ at  
(1.138, 9.125, 14.72) cm with 3.495e+04 e, Cluster No. 0 and bottom 1, mc point id = 4  
hit.GetClusterIndex() 0  
hit.GetBotIndex() 1  
hit.GetRefIndex() 4

Detector path:  
/cave\_1/MVD-1.0oPv-1.0oSv-1.0\_0/Sv-1\_1/Fwd\_1/StripoLdk\_1/StripoSmodoN2oT  
rapL\_6/StripoModo1SensoTrapL\_2/StripoSensoTrapL\_1/StripActiveoTrapLoPart  
Ass\_1/StripActiveoTrapL\_1  
-l- PndMvdRecoHit::PndMvdRecoHit: Wrote a hit with

(x,y) = (0.06310,-1.516).  
(dx,dy) = (2.616e-06,1.987e-05). not used: dz=0.004330  
-l- PndMvdRecoHit::PndMvdRecoHit(PndMvdHit\*) called.  
PndMvdHit in 1\_1/27\_0/53\_1/34\_1/33\_2/32\_6/31\_2/30\_1/29\_1/28\_1/ at  
(1.320, 12.09, 19.42) cm with 1.592e+04 e, Cluster No. 2 and bottom 3, mc point id = 4  
hit.GetClusterIndex() 2  
hit.GetBotIndex() 3  
hit.GetRefIndex() 4

Detector path:

/cave\_1/MVD-1.0oPv-1.0oSv-1.0\_0/Sv-1\_1/Fwd\_1/StripoLdk\_2/StripoSmodoN2oT  
rapL\_6/StripoModo1SensoTrapL\_2/StripoSensoTrapL\_1/StripActiveoTrapLoPart  
Ass\_1/StripActiveoTrapL\_1

-l- PndMvdRecoHit::PndMvdRecoHit: Wrote a hit with  
(x,y) = (0.2686,1.443).  
(dx,dy) = (2.840e-06,2.157e-05). not used: dz=0.004330  
6 hits in track 0

\*\*\* Error in subr. TRPROP 3 called bysubr. ERPROP

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\*\*\* Error in subr. TRPROP 3 called bysubr. ERPROP

\*\*\* Break \*\*\* floating point exception

```

(no debugging symbols found)
Using host libthread_db library "/lib/tls/libthread_db.so.1".
Attaching to program: /proc/18745/exe, process 18745
(no debugging symbols found)...done.
[Thread debugging using libthread_db enabled]
[New Thread -1208957248 (LWP 18745)]
(no debugging symbols found)...done.
(no debugging symbols found)...done.
(no debugging symbols found)...done.
(no debugging symbols found)...done.
(no debugging symbols found)...done.
(no debugging symbols found)...done.
(no debugging symbols found)...done.
0x0075d7a2 in _dl_sysinfo_int80 () from /lib/ld-linux.so.2
#1 0x0044cf13 in __waitpid_nocancel () from /lib/tls/libc.so.6
#2 0x003f67b9 in do_system () from /lib/tls/libc.so.6
#3 0x003bb98d in system () from /lib/tls/libpthread.so.0
#4 0x0096b4b7 in TUnixSystem::Exec () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#5 0x0097114f in TUnixSystem::StackTrace () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#6 0x0096db4a in TUnixSystem::DispatchSignals () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#7 0x0096dbd8 in SigHandler () from /home/stefano/july09/tools/root/lib/libCore.so.5.24
#8 0x0096ce55 in sighandler () from /home/stefano/july09/tools/root/lib/libCore.so.5.24
#9 <signal handler called>
#10 0xb512f65b in xmm55_ () from
/home/stefano/july09/transport/geant3/lib/tgt_linux/libgeant321.so
#11 0xb51a6286 in trprfn_ () from
/home/stefano/july09/transport/geant3/lib/tgt_linux/libgeant321.so
#12 0xb51a14b5 in erprop_ () from
/home/stefano/july09/transport/geant3/lib/tgt_linux/libgeant321.so
#13 0xb51a3026 in ertrch_ () from
/home/stefano/july09/transport/geant3/lib/tgt_linux/libgeant321.so
#14 0xb51a3b81 in ertrgo_ () from
/home/stefano/july09/transport/geant3/lib/tgt_linux/libgeant321.so
#15 0xb51a2137 in ertrak_ () from
/home/stefano/july09/transport/geant3/lib/tgt_linux/libgeant321.so
#16 0xb52320c3 in TGeant3::Ertrak () from
/home/stefano/july09/transport/geant3/lib/tgt_linux/libgeant321.so
#17 0x06eb65c2 in FairGeanePro::Propagate (this=0xcc8c240, PDG=13) at
/home/stefano/july09/pandaroot/geane/FairGeanePro.cxx:276
#18 0x06eb5e47 in FairGeanePro::Propagate (this=0xcc8c240, TStart=0xbfe6b6f0,
TEnd=0xbfe6bda0, PDG=13)
    at /home/stefano/july09/pandaroot/geane/FairGeanePro.cxx:227
#19 0x024bbd87 in GeaneTrackRep::extrapolate (this=0xf7afcc8, pl=@0xbfe6cc60,
statePred=@0xbfe6cde0, covPred=@0xbfe6cce0)
    at /home/stefano/july09/pandaroot/trackrep/GeaneTrackRep.cxx:167
#20 0x0243c53e in Kalman::processHit (this=0xbfe6e270, tr=0xf7246e0, ihit=0, irep=0,
rejectOutlier=false)
    at /home/stefano/july09/pandaroot/genfit/Kalman.cxx:248

```

```
#21 0x0243b6b4 in Kalman::fittingPass (this=0xbfe6e270, trk=0xf7246e0, direction=1) at
/home/stefano/july09/pandaroot/genfit/Kalman.cxx:140
#22 0x0243ae57 in Kalman::processTrack (this=0xbfe6e270, trk=0xf7246e0) at
/home/stefano/july09/pandaroot/genfit/Kalman.cxx:38
#23 0x0389066f in PndLheKalmanTask::Exec (this=0xc255ce8, opt=0x4ed20a8 "") at
/home/stefano/july09/pandaroot/lhetrack/PndLheKalmanTask.cxx:244
#24 0x008f8b25 in TTask::ExecuteTasks () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#25 0x008f8921 in TTask::ExecuteTask () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#26 0x04e74596 in FairRunAna::Run (this=0x9510688, Ev_start=0, Ev_end=500) at
/home/stefano/july09/pandaroot/base/FairRunAna.cxx:248
#27 0x04eabfbc in G__FairDict_592_0_5 (result7=0xbfe7c4c0, funcname=0x950dbd8 "\001",
libp=0xbfe70e70, hash=0)
    at /home/stefano/july09/cbuild/base/FairDict.cxx:9025
#28 0x00e42d4b in Cint::G__ExceptionWrapper () from
/home/stefano/july09/tools/root/lib/libCint.so.5.24
#29 0x00ed7be4 in G__execute_call () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#30 0x00ed7ef6 in G__call_cppfunc () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#31 0x00eb8bbf in G__interpret_func () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#32 0x00ea74f4 in G__getfunction () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#33 0x00f8b865 in G__getstructmem () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#34 0x00f8335b in G__getvariable () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#35 0x00e8b4e2 in G__getitem () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#36 0x00e8e477 in G__getexpr () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#37 0x00f075dc in G__exec_statement () from
/home/stefano/july09/tools/root/lib/libCint.so.5.24
#38 0x00e79668 in G__exec_tempfile_core () from
/home/stefano/july09/tools/root/lib/libCint.so.5.24
#39 0x00e7a99f in G__exec_tempfile () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#40 0x00f188ea in G__process_cmd () from /home/stefano/july09/tools/root/lib/libCint.so.5.24
#41 0x009594b3 in TCint::ProcessLine () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#42 0x00959634 in TCint::ProcessLineSynch () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#43 0x0088ecdb in TApplication::ExecuteFile () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#44 0x0088f06b in TApplication::ProcessFile () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#45 0x0088ced3 in TApplication::ProcessLine () from
/home/stefano/july09/tools/root/lib/libCore.so.5.24
#46 0x00601361 in TRint::Run () from /home/stefano/july09/tools/root/lib/libRint.so.5.24
#47 0x08048d5a in main ()
```

The initial parameters are, in red: position, momentum, position error, momentum error -> a not so special track.

This track is made of 6 hits, it seems only MVD hits. At the end the error seems in TGeant3::Ertrak () .

If somebody could take a look and hopefully fix it...

Thanks in advance

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