Subject: GEANE and GENFIT
Posted by Sebastian Neubert on Tue, 08 Apr 2008 09:33:31 GMT
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Hi!

The genfit demo is running now with geane! Several things have been fixed, so that it is also possible now to read back Tracks with a GeaneTrackRep into ROOT.

If you check out revision 2436 the relevant changes in trackrep/ genfit/ and recotasks/ should be available. The demo should run out of the box:

> root -l -q recotasks/demo/runMC.C
> root -l -q recotasks/demo/runDemo.C
> root -l -q recotasks/demo/plotDemo.C

this will run the fit with the LSLTrackRep.

To change to GEANE look into runDemo.C and activate Geane:

```
DemoDemoPatternRecoTask* DemoPR = new DemoPatternRecoTask();
DemoPR->AddHitBranch(2,"PndTpcPoint");
//  DemoPR->AddHitBranch(3,"MVDPoint");
DemoPR->SetPersistence();
//DemoPR->UseGeane();      // uncomment this line!
fRun->AddTask(DemoPR);
```

In the plotDemo.C macro it is also shown how you can access fit information from the ROOT command line, with a simple draw command.

Unfortunately not everything is going correctly. Here are the resulting plots (Tracks of 500MeV, Theta=40deg):

For LSLTrackRep:

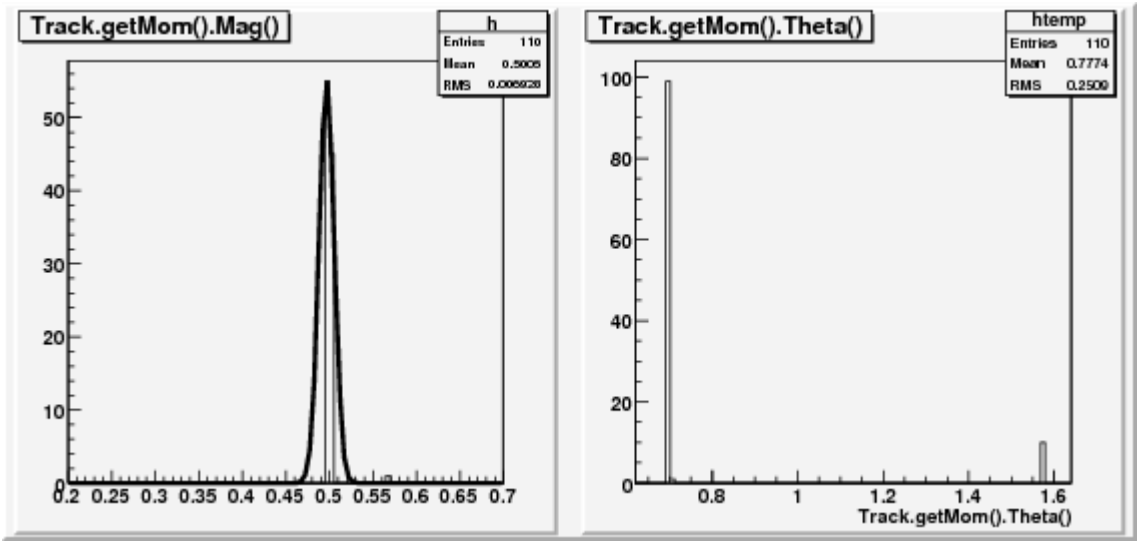
For GeaneTrackRep:

I will look into that... Maybe someone could try the macro, if the behaviour can be reproduced..?

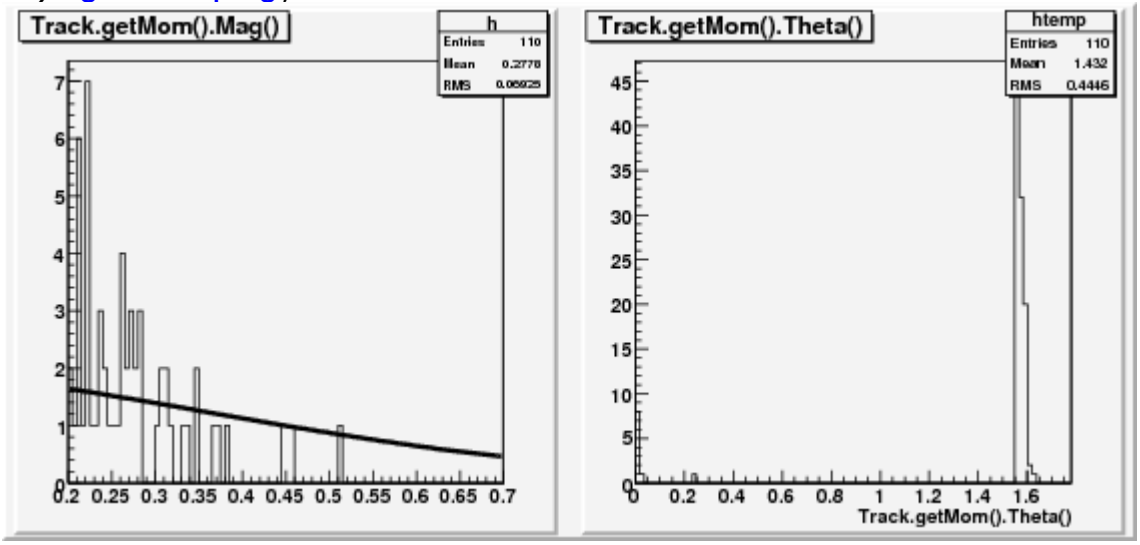
Cheers! Sebastian.

File Attachments

1) LSL.png, downloaded 1653 times



2) geane.png, downloaded 1744 times



Subject: Re: GEANE and GENFIT
Posted by Anonymous Poster on Tue, 08 Apr 2008 13:21:07 GMT
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Hi Sebastian,

I tried to run the recotasks/runDemo.C, but it is crashing after 21 events. I used the events Lambda0 ->p+pi- using BoxGenerator. when I use "DemoPR->UseGeane();" option it crashes. Without this option it runs fine. May be there is still some problems. Following are the error messages after crash:

++
CbmGeaneUtil::FromSDToMars-1
qp=-9.799 Dqp=0.02927
TV=-2.28 DTV=0.02352
TW=1.476 DTW=0.01498
V=15.47 DV=0.03461
W=1.213 DW=0.03037

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

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

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

*** Break *** floating point exception
Using host libthread_db library "/lib/libthread_db.so.1".
Attaching to program: /proc/15386/exe, process 15386
Failed to read a valid object file image from memory.
done.
done.
[Thread debugging using libthread_db enabled]
[New Thread 16384 (LWP 15386)]
done.
done.
done.
done.
done.
done.
done.
done.
done.
done.
0x40c90788 in waitpid () from /lib/libc.so.6
#1 0x40d188c0 in __DTOR_END__ () from /lib/libc.so.6
#2 0x40c29442 in do_system () from /lib/libc.so.6
#3 0x40ba3c5f in system () from /lib/libpthread.so.0
#4 0x401fa79f in TUnixSystem::Exec ()
   from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#5 0x401fac63 in TUnixSystem::StackTrace ()
   from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#6 0x401f85cc in TUnixSystem::DispatchSignals ()
   from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#7 0x401f63a8 in SigHandler ()
   from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#8 0x401fdefe in sighandler ()
   from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#9 0x40ba2825 in __pthread_sighandler () from /lib/libpthread.so.0
#10 <signal handler called>
#11 xmm55_ (a=0x433be198, b=0x433be168, c=0x433be168) at matx55/xmm55.F:42
#12 0x43069289 in trprfn_ (x1=0x4338f458, p1=0x0, h1=0x4338f470, x2=0x4338f494,
p2=0x4338f4a0,
    h2=0x4338f4ac, ch=0x4338f4d0, xl=0x433be198, r=0xbfd8b950, mvar=0xbfd8b940,
    iflag=0xbfd8b944, itran=0x433be198, ierr=0xbfd8b94c) at erpremc/trprfn.F:376

#13 0x43065326 in erprop_ () at erdecks/erprop.F:62
#14 0x430665bb in ertrch_ () at erdecks/ertrch.F:322
#15 0x43066db2 in ertrgo_ () at erdecks/ertrgo.F:236
#16 0x43065be5 in ertrak_ (x1=0xa1b6d38, p1=0xa1b6d44, x2=0xa1b6cac, p2=0xa1b6cb8,
ipa=0xffffffff, chopt=0xffffffff, __g77_length_chopt=1126230360) at erdecks/ertrak.F:211
#17 0x430ef4b1 in TGeant3::Ertrak (this=0x9b1a5b0, x1=0x433be198, p1=0x433be198,
x2=0x433be198,
p2=0x433be198, ipa=6, chopt=0xa33b8d0 "PE") at TGeant3/TGeant3.cxx:5392
#18 0x44f7ba60 in CbmGeanePro::Propagate (this=0xa1b6c28, PDG=13)
at /d/panda02/dipak/pndroot0308/pandaroot/geane/CbmGeanePro.cxx:239
#19 0x44f7b4eb in CbmGeanePro::Propagate (this=0xa1b6c28, TStart=0xbfd8c370,
TEnd=0xbfd8c800,
PDG=13) at /d/panda02/dipak/pndroot0308/pandaroot/geane/CbmGeanePro.cxx:205
#20 0x45022084 in GeaneTrackRep::extrapolate (this=0xa504bc8, pl=@0xbfd8d5f0,
statePred=@0xbfd8d870, covPred=@0xbfd8d770, jacobian=@0xbfd8d670)
at /d/panda02/dipak/pndroot0308/pandaroot/trackrep/GeaneTrackRep.cxx:169
#21 0x45022793 in GeaneTrackRep::predict (this=0xa504bc8, pl=@0xbfd8d5f0,
statePred=@0xbfd8d870,
covPred=@0xbfd8d770, jacobian=@0xbfd8d670)
at /d/panda02/dipak/pndroot0308/pandaroot/trackrep/GeaneTrackRep.cxx:248
#22 0x44fc5152 in Kalman::processHit (this=0xbfd8da90, hit=0xa0187e0, rep=0xa504bc8,
hitIndex=136) at /d/panda02/dipak/pndroot0308/pandaroot/genfit/Kalman.cxx:165
#23 0x44fc494c in Kalman::continueTrack (this=0xbfd8da90, trk=0xa331f80)
at /d/panda02/dipak/pndroot0308/pandaroot/genfit/Kalman.cxx:70
#24 0x44fc484b in Kalman::processTrack (this=0xbfd8da90, trk=0xa331f80)
at /d/panda02/dipak/pndroot0308/pandaroot/genfit/Kalman.cxx:45
#25 0x452c8296 in DemoKalmanTask::Exec (this=0x9bb5368, opt=0x4497fa80 "")
at /d/panda02/dipak/pndroot0308/pandaroot/recotasks/demo/DemoKalmanTask.cxx :140
#26 0x40190462 in TTask::ExecuteTasks ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#27 0x40190246 in TTask::ExecuteTask ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#28 0x4490639f in CbmRunAna::Run (this=0x852d638, Ev_start=0, Ev_end=22)
at /d/panda02/dipak/pndroot0308/pandaroot/base/CbmRunAna.cxx:157
#29 0x44942b62 in G__CbmDict_531_0_5 (result7=0xbfd9b680, funcname=0x852bb50
"\001",
libp=0xbfd980d0, hash=0) at /d/panda02/dipak/pndroot0308/build/base/CbmDict.cxx:9370
#30 0x40779856 in Cint::G__ExceptionWrapper ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#31 0x40850ddf in G__call_cppfunc ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#32 0x4083c969 in G__interpret_func ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#33 0x4081bb8c in G__getfunction ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#34 0x408e6469 in G__getstructmem ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#35 0x408e5792 in G__getvariable ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#36 0x40810ac0 in G__getitem ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#37 0x407ffd80 in G__getexpr ()

from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#38 0x40870aa8 in G__exec_function ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#39 0x40880325 in G__exec_statement ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#40 0x407eb88a in G__exec_tempfile_core ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#41 0x407ece41 in G__exec_tempfile ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#42 0x4088b8b4 in G__process_cmd ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCint.so.5.18
#43 0x401c6e45 in TCint::ProcessLine ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#44 0x401c7006 in TCint::ProcessLineSynch ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#45 0x40120ed0 in TApplication::ExecuteFile ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#46 0x40120816 in TApplication::ProcessFile ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#47 0x401205a4 in TApplication::ProcessLine ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#48 0x40b48e4d in TRint::HandleTermInput ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libRint.so.5.18
#49 0x40b471a7 in TTermInputHandler::Notify ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libRint.so.5.18
#50 0x40b49e04 in TTermInputHandler::ReadNotify ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libRint.so.5.18
#51 0x401f89d5 in TUnixSystem::CheckDescriptors ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#52 0x401f7c7d in TUnixSystem::DispatchOneEvent ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#53 0x40180fa0 in TSystem::InnerLoop ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#54 0x40180d61 in TSystem::Run ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#55 0x40121567 in TApplication::Run ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libCore.so.5.18
#56 0x40b486d9 in TRint::Run ()
from /misc/cbmsoft/Debian3.1/mar08/fairsoft/tools/root/lib/libRint.so.5.18
#57 0x08048e2e in main ()
Root >

Best Regards,
Dipak

Subject: Re: GEANE and GENFIT
Posted by Lia Lavezzi on Tue, 08 Apr 2008 15:51:51 GMT
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Hi Sebastian,
Susanna and I tested the new runDemo.C (with the updated genfit, recotask, trackrep...). We attach the plot that we obtain with LSLTrackRep and with GeaneTrackRep: actually we don' t see the strange behaviour you obtain.
Concerning the theta variable, in the function getMom of GeaneTrackRep, the order of the momentum components must be changed from TVector3 result(pu,pv,pw) to TVector3 result(pv,pw,pu); in fact the pv and pw components lie on the plane and pu is orthogonal to it ...and here the problem you addressed about the two different definitions of plane in CbmTrackParP and DetPlane appears! Mmmm, ok, I have to admit that we have to be very careful when calculating the components in the plane reference frame!!

Ciao,
Lia and Susanna.

File Attachments
1) geane.pdf, downloaded 580 times
2) lsl.pdf, downloaded 550 times

Subject: Re: GEANE and GENFIT
Posted by Lia Lavezzi on Tue, 08 Apr 2008 15:54:36 GMT
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Hi Dipak,
you can try to follow the suggestion Andrea wrote in message #6224 of the thread "Problem with low momentum Pion" in this forum, it should help you since the error comes from TRPROP.

Best Regards,
Lia and Susanna.

Subject: Re: GEANE and GENFIT
Posted by Sebastian Neubert on Wed, 09 Apr 2008 07:57:46 GMT
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Hi Lia and Susanna!

Great! It works for you! I am very glad to hear that. I have still problems under debian etch using the gcc4. See the other thread on the forum. But we are making progress
Thank you very much for checking this! And for your advice concerning Geane!!

Cheers! Sebastian.

Subject: Re: GEANE and GENFIT
Posted by Anonymous Poster on Wed, 09 Apr 2008 16:30:41 GMT
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Hi,

I have tested the macros also with GEANE at Munich, but with the old sarge system. I do NOT encounter any more crashes. So the problems seem to be related with compiling GEANE with GCC4. Could or maybe did somebody from Pavia try to run this with a GCC4 environment?

Bye, Christian

Subject: Re: GEANE and GENFIT
Posted by Sebastian Neubert on Thu, 10 Apr 2008 08:38:49 GMT
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After fixing the bug with the covariance array it is running with gcc4!
No problems anymore from that direction.

Cheers! Sebastian.
