Subject: UPDATE: TPC MVD and GEM correlators
Posted by Felix Boehmer on Fri, 17 Jun 2011 17:31:21 GMT
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Dear analysts,

I am happy to announce that we think we fixed the remaining problems with the extrapolations. Actually, it was a numerical protection that we built in quite some time ago and that has been removed without my knowledge. There also have been some other improvements in the code.

Please update

tpc/tpcreco
GenfitTools
recotasks
macro/run

I used macro/run/tdrct/run_reco_tpc.C to simulate 1000 muons at 2.0 GeV/c going forward at 18 deg "scattering" angle with real PR. I attached plots of the reconstructed momentum spectra after TPC fit, TPC+MVD fit and TPC+MVD+GEM fit.
I am sorry that this all comes at such a late point in time.

There are quite some issues that need to be resolved now:

Which digitization revision are we going for the data challenge and the short-term analysis until Tuesday?
The macro/run/tdrct section needs to be cleaned up - how is the conversion to PndTracks and PndTrackCands going to happen?
I noticed that the GEMs were removed from the dpm digi macro! Was this done on purpose? I put them back in now.
If an update of the TPC digi is performed (be it on the GRID or now in the personal studies of the analysts) the cluster shift in the reco macro has to be adapted (see the comments in macro/run/tdrct/run_reco_tpc.C)! The correlator tasks actually write out histograms of the X,Y and Z residuals that occured during extrapolation of the TPC tracks into MVD and GEM (see reco macro). I ask the analysts to please check the Z residuals. If they are centered around 0, the proper shift has been applied.

I want to thank Dima and Stefano for their help! I apologize again for the chaos. I urge all the analysts to check out the newest versions of the code (in the correct folders, that is) and keep me updated about their results. I also want to make everyone involved in the analysis that in its current setup the reconstruction track fits work on BOTH GEANE and RKTRackRep at the same time. GEANE is set to be the cardinal track representation and is used in the correlators, but one can get both fit results by calling getRep(i), where i=1 refers to GEANE and i=0 returns the RKTrackRep.

Cheers

Felix

File Attachments

1) momResTPC.eps, downloaded 467 times
2) momResTPC_MVD.eps, downloaded 534 times
3) momResTPC_MVD_GEM.eps, downloaded 486 times

Subject: Re: UPDATE: TPC MVD and GEM correlators
Posted by Dima Melnychuk on Fri, 17 Jun 2011 23:59:28 GMT
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Hi Felix,

I want once again report error which I have with tpc reconstruction macro. To be more precise /macro/run/tdrct/eta_c/run_reco_tpc_evt.C
It appeared after removing PndTpcClusterFinderTask task from this macro.

```
==================================================
----  : SolenoidMap4
----
----  Field type     : Soleniod Map
----
----  Field map grid :
----  x = 0.000 to 240.0 cm, 161 grid points, dx = 1.500 cm
----  y = 0.000 to 240.0 cm, 161 grid points, dy = 1.500 cm
----  z = 247.7 to 283.7 cm, 25 grid points, dz = 1.500 cm

----  Field centre position: (  0.000,  0.000,  0.000) cm
----  Field scaling factor: 1.000
----
----  Field at origin is (  0.000,  0.000,  0.000) kG
==================================================
I- FairGeane::FairGeane:  Geane is Initialized
PndTpcGas: Reading data file: NEON-90_CO2-10_B2_PRES1013.asc
Fatal in <PndTpcGas::PndTpcGas>: Input File is not found
aborting
#0  0x00002b74ef5d79e5 in waitpid () from /lib/libc.so.6
#1  0x00002b74ef577e11 in do_system () from /lib/libc.so.6
#2  0x00002b74ed22ddc6 in TUnixSystem::StackTrace ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#3  0x00002b74ed15929b in DefaultErrorHandler ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#4  0x00002b74ed158c07 in ErrorHandler ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#5  0x00002b74ed158d33 in Fatal ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#6  0x00002b74faaee691 in PndTpcGas (this=0x62838e0,
    Filename=
```

0x7fff1c8cda30, E=400)
    at /d/panda02/dmelnych/pandaroot/pandaroot/tpc/PndTpcGas.cxx:53
#7 0x00002b74fab06c73 in PndTpcDigiMapper (this=0x436c010, autoinit=true)
    at /d/panda02/dmelnych/pandaroot/pandaroot/tpc/PndTpcDigiMapper.cxx:19
#8 0x00002b74fab12b40 in PndTpcDigiMapper::getInstance (autoinit=true)
    at /d/panda02/dmelnych/pandaroot/pandaroot/tpc/PndTpcDigiMapper.h:63
#9 0x00002b74fb76a078 in PndTpcRiemannTrackingTask::Init (this=0x25c45d0)
    at
/d/panda02/dmelnych/pandaroot/pandaroot/tpc/tpcreco/PndTpcRiemannTrackingTask.cxx:219
#10 0x00002b74f6dfac73 in FairTask::InitTask (this=0x25c45d0)
    at /d/panda02/dmelnych/pandaroot/pandaroot/base/FairTask.cxx:48
#11 0x00002b74f6dfad0a in FairTask::InitTasks (this=0x15484c0)
    at /d/panda02/dmelnych/pandaroot/pandaroot/base/FairTask.cxx:120
#12 0x00002b74f6dfacd4 in FairTask::InitTask (this=0x15484c0)
    at /d/panda02/dmelnych/pandaroot/pandaroot/base/FairTask.cxx:53
#13 0x00002b74f6df4da4 in FairRunAna::Init (this=0x15483f0)
    at /d/panda02/dmelnych/pandaroot/pandaroot/base/FairRunAna.cxx:208

It is solved when I copy NEON-90_CO2-10_B2_PRES1013.asc and two other files from /tpc/ directory to the directory from which I run macro but this solution doesn't work for batch farm. For me it's strange that you don't have it, but may be you have /tpc/ directory set in PATH?

Concerning the conversion to PndTracks and PndTrackCands, you can see how I added the PndGFTrackToPndTrackConvertorTask for conversion into my version of tpc reconstruction macro /macro/run/tdrct/eta_c/run_reco_tpc_evt.C And if it will work, I suppose that it's best way for conversion at the moment.
Hovewer it still needs to be tested. My problem is that with this task and macro running at GSI lenny64 computer I have the following crash (with both GeaneTrackRep and RKTrackRep)

GFAbsTrackRep::Covariances

5x5 matrix is as follows

| 0 | 1 | 2 | 3 | 4 |
---|---|---|---|---|---|
0 | 0.0007259 | 4.544e-05 | 4.304e-05 | 0.0002382 | 0.0002368
1 | 4.544e-05 | 3.24e-06 | 2.656e-06 | 2.096e-05 | 1.392e-05
2 | 4.304e-05 | 2.656e-06 | 2.973e-06 | 1.324e-05 | 2.026e-05
3 | 0.0002382 | 2.096e-05 | 1.324e-05 | 0.0002027 | 5.131e-05
4 | 0.0002368 | 1.392e-05 | 2.026e-05 | 5.131e-05 | 0.0002017

GFAbsTrackRep::chi^2
4746.
++
starting track11
12 hits in track 11
*** Number of clusters in track: 12 ***

starting fit
Calling processTrack
Fitting done
RKTrackRep::RKutta ==> Too long extrapolation requested : 3007.6 cm !
X = -2.60625 Y = -11.9504 Z = 83.0668 COSx = 0.220186 COSy = 0.691942 COSz = 0.687557
Destination X = -20.70
Error: Symbol #include is not defined in current scope run_reco_tpc_evt.C:140:
Error: Symbol exception is not defined in current scope run_reco_tpc_evt.C:140:
Syntax Error: #include <exception> run_reco_tpc_evt.C:140:
Error: Symbol G__exception is not defined in current scope run_reco_tpc_evt.C:140:
Error: type G__exception not defined
FILE:/d/panda02/dmelnych/pandaroot/pandaroot/macro/run/tdrct/eta_c/./run_reco_tpc_evt.C
LINE:140
*** Interpreter error recovered ***

I suppose it's related to memory problem. But with my computer at work conversion worked for RKTrackRep at least for 20 events. I wanted to avoid memory problem running macro at GSI batch farm but the first problem stops me from doing it.

Dima

Subject: Re: UPDATE: TPC MVD and GEM correlators
Posted by Felix Boehmer on Sat, 18 Jun 2011 00:22:17 GMT
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Hi Dima,

Quote:PndTpcGas: Reading data file: NEON-90_CO2-10_B2_PRES1013.asc
Fatal in <PndTpcGas::PndTpcGas>: Input File is not found

I had the same thing before - has there been some change to the param file recently? Stefano? It was working yesterday, and now the files aren't looked up in the tpc folder anymore, but in the trunk .... This has to be solved! Otherwise we need some links lying in trunk/ ...

Concerning the other crash - this looks still like one of the exceptions we've been seeing in the extrapolations... Are you sure you are running the latest version of GenfitTools/, tpc/tpcreco/, recotasks/ and genfit/ ? What is the version if GeaneTrackRep and RKTrackRep?

If you suspect memory usage - can you check how much the macro is using up?

Cheers

Felix

Hi Felix,

Quote:Actually, it was a numerical protection that we built in quite some time ago and that has been removed without my knowledge. There also have been some other improvements in the code.

Do you mean the protection against low momenta? I removed it some months ago since we fixed the realated problem in GEANE (or at lest I thought it was fixed...). I am really sorry if this is the cause of the crash, but I really cannot understand why GEANE started to crash again on low momenta after several months of good work.
After next week I will investigate GEANE in more detail and make a full check, sorry for not beeing able to do it now.

Unfortunately there is also a bad news. With the updated code I get this crash:

Found Tracks: 1 in event no. 264

*** Break *** floating point exception

==========
There was a crash (kSigFloatingException).
This is the entire stack trace of all threads:
==========
#0 0xffffe424 in __kernel_vsyscall ()
#1 0xb63c78c3 in __waitpid_nocancel () from /lib/libc.so.6
#2 0xb6364963 in do_system () from /lib/libc.so.6
#3 0xb64a557b in system () from /lib/libpthread.so.0
#4 0xb71fa231 in TUnixSystem::Exec (this=0x80711c0,
shellcmd=0x10f613a0 "/home/lavezzi/fairsoft5/tools/root/etc/gdb-backtrace.sh 24944 1>&2")
at /home/lavezzi/fairsoft5/tools/root/core/unix/src/TUnixSystem.cxx:2036
#5 0xb71faa3d in TUnixSystem::StackTrace (this=0x80711c0)
at /home/lavezzi/fairsoft5/tools/root/core/unix/src/TUnixSystem.cxx:2265
#6 0xb71f85d7 in TUnixSystem::DispatchSignals (this=0x80711c0,
sig=kSigFloatingException)
at /home/lavezzi/fairsoft5/tools/root/core/unix/src/TUnixSystem.cxx:1162
#7 0xb71f6785 in SigHandler (sig=kSigFloatingException)
at /home/lavezzi/fairsoft5/tools/root/core/unix/src/TUnixSystem.cxx:362
#8 0xb71fdcef in sighandler (sig=8)
at /home/lavezzi/fairsoft5/tools/root/core/unix/src/TUnixSystem.cxx:3552
#9 <signal handler called>
#10 0xb23d9bb1 in GFTools::invertMatrix (mat=..., inv=...)
at /home/lavezzi/test_dev/trunk/genfit/GFTools.cxx:262
#11 0xb23d0478 in GFKalman::chi2Increment (this=0x8aa5d28, r=..., H=...,
cov=..., V=...)
at /home/lavezzi/test_dev/trunk/genfit/GFKalman.cxx:200

```
#12 0xb23d14f5 in GFKalman::processHit (this=0x8aa5d28, tr=0x10f55e68,
    ihit=1, irep=0, direction=-1)
    at /home/lavezzi/test_dev/trunk/genfit/GFKalman.cxx:313
#13 0xb23d02bd in GFKalman::fittingPass (this=0x8aa5d28, trk=0x10f55e68,
    direction=-1) at /home/lavezzi/test_dev/trunk/genfit/GFKalman.cxx:169
#14 0xb23cfb0b in GFKalman::processTrack (this=0x8aa5d28, trk=0x10f55e68)
    at /home/lavezzi/test_dev/trunk/genfit/GFKalman.cxx:77
#15 0xafb38f01 in PndRecoKalmanFit::Fit (this=0x8aa5cf8, tBefore=
    0xecb6e08, PDG=13)
    at  /home/lavezzi/test_dev/trunk/GenfitTools/recotasks/PndRecoKalmanFit.cxx: 282
#16 0xafb3eabd in PndRecoKalmanTask::Exec (this=0x8a9d638,
    opt=0xb35949c0 "")
    at  /home/lavezzi/test_dev/trunk/GenfitTools/recotasks/PndRecoKalmanTask.cxx :122
#17 0xb717f5c9 in TTask::ExecuteTasks (this=0x808ca90,
    option=0xb35949c0 "")
    at /home/lavezzi/fairsoft5/tools/root/core/base/src/TTask.cxx:312
#18 0xb717f3df in TTask::ExecuteTask (this=0x808ca90,
    option=0xb35949c0 "")
    at /home/lavezzi/fairsoft5/tools/root/core/base/src/TTask.cxx:275
#19 0xb34ebb99 in FairRunAna::Run (this=0x844ff00, Ev_start=0,
    Ev_end=2000) at /home/lavezzi/test_dev/trunk/base/FairRunAna.cxx:272
#20 0xb353ed84 in G__FairDict_883_0_5 (result7=0xbfa4f088,
    funcname=0x808b028 "", libp=0xbfa44a44, hash=0)
    at /home/lavezzi/test_dev/trunk/cbuild/base/FairDict.cxx:13242
#21 0xb69a183e in Cint::G__ExceptionWrapper (
    funcp=0xb353ec93 <G__FairDict_883_0_5(G__value*, char const*, G__param*, int)>,
result7=0xbfa4f088, funcname=0x808b028 "", libp=0xbfa44a44,
    hash=0) at cint/cint/src/Api.cxx:393
#22 0xb6a699f6 in G__execute_call (result7=0xbfa4f088, libp=0xbfa44a44,
    ifunc=0x808b028, ifn=0) at cint/cint/src/newlink.cxx:2406
#23 0xb6a6a250 in G__call_cppfunc (result7=0xbfa4f088, libp=0xbfa44a44,
    ifunc=0x808b028, ifn=0) at cint/cint/src/newlink.cxx:2610
#24 0xb6a464ec in G__interpret_func (result7=0xbfa4f088,
    funcname=0x807f0a0 "Run", libp=0xbfa44a44, hash=309,
    p_ifunc=0x808b028, funcmatch=1, memfunc_flag=1)
    at cint/cint/src/ifunc.cxx:5795
#25 0xb6a22d68 in G__getfunction (item=0x807c30e "Run(0,nEvents)",
    known3=0xbfa5257c, memfunc_flag=1) at cint/cint/src/func.cxx:2665
#26 0xb6b44144 in G__getstructmem (store_var_type=112, varname=...,
    membername=0x807c30e "Run(0,nEvents)", memnamesize=2147483647,
    tagname=0x807cb18 "fRun", known2=0xbfa5257c, varglobal=0xb6c07280,
    objptr=2) at cint/cint/src/var.cxx:6804
#27 0xb6b3629f in G__getvariable (item=0x807c308 "fRun->Run(0,nEvents)",
    known=0xbfa5257c, varglobal=0xb6c07280, varlocal=0x0)
    at cint/cint/src/var.cxx:5390
#28 0xb6a12f7d in G__getitem (item=0x807c308 "fRun->Run(0,nEvents)")
    at cint/cint/src/expr.cxx:1906
#29 0xb6a10ae6 in G__getexpr (expression=0x809a148 "fRun->Run(0,nEvents)")
    at cint/cint/src/expr.cxx:1488
#30 0xb6a99e32 in G__exec_function (statement=..., pc=0xbfa543f4,
    piout=0xbfa543f0, plargestep=0xbfa543e8, presult=0xbfa54370)
    at cint/cint/src/parse.cxx:645
```

#31 0xb6aaa416 in G__exec_statement (mparen=0xbfa54654)
    at cint/cint/src/parse.cxx:7372
#32 0xb69e6489 in G__exec_tempfile_core (
    file=0x8099940 "
/home/lavezzi/test_dev/trunk/macro/dedx/muon/rireco1/./run_reco_sttcombi _sin.C ", fp=0x0)
at cint/cint/src/debug.cxx:265
#33 0xb69e7db3 in G__exec_tempfile (
    file=0x8099940 "
/home/lavezzi/test_dev/trunk/macro/dedx/muon/rireco1/./run_reco_sttcombi _sin.C ") at
cint/cint/src/debug.cxx:813
#34 0xb6ab83a4 in G__process_cmd (
    line=0x83f94b8 ".x
/home/lavezzi/test_dev/trunk/macro/dedx/muon/rireco1/./run_reco_sttcombi _sin.C ",
prompt=0x8073984 "", more=0x807397c,
    err=0xbfa556c4, rslt=0xbfa55690) at cint/cint/src/pause.cxx:3170
#35 0xb71b6fba in TCint::ProcessLine (this=0x8073950,
    line=0x83f94b8 ".x
/home/lavezzi/test_dev/trunk/macro/dedx/muon/rireco1/./run_reco_sttcombi _sin.C ",
error=0xbfa582ac)
    at /home/lavezzi/fairsoft5/tools/root/core/meta/src/TCint.cxx:522
#36 0xb71b7513 in TCint::ProcessLineSynch (this=0x8073950,
    line=0x83f94b8 ".x
/home/lavezzi/test_dev/trunk/macro/dedx/muon/rireco1/./run_reco_sttcombi _sin.C ",
error=0xbfa582ac)
    at /home/lavezzi/fairsoft5/tools/root/core/meta/src/TCint.cxx:601
#37 0xb710eb38 in TApplication::ExecuteFile (
    file=0xbfa56271 "run_reco_sttcombi_sin.C", error=0xbfa582ac,
    keep=false)
    at /home/lavezzi/fairsoft5/tools/root/core/base/src/TApplication.cxx:1035
#38 0xb710e3e6 in TApplication::ProcessFile (this=0x8138ed0,
    file=0xbfa56271 "run_reco_sttcombi_sin.C", error=0xbfa582ac,
    keep=false)
    at /home/lavezzi/fairsoft5/tools/root/core/base/src/TApplication.cxx:911
#39 0xb710e2a0 in TApplication::ProcessLine (this=0x8138ed0,
    line=0xbfa5626e ".x run_reco_sttcombi_sin.C", sync=false,
    err=0xbfa582ac)
    at /home/lavezzi/fairsoft5/tools/root/core/base/src/TApplication.cxx:884
#40 0xb6616c9b in TRint::Run (this=0x8138ed0, retrn=false)
    at /home/lavezzi/fairsoft5/tools/root/core/rint/src/TRint.cxx:402
#41 0x08049085 in main (argc=1, argv=0xbfa583d4)
    at /home/lavezzi/fairsoft5/tools/root/main/src/rmain.cxx:29
==========

The lines below might hint at the cause of the crash.
If they do not help you then please submit a bug report at
http://root.cern.ch/bugs. Please post the ENTIRE stack trace
from above as an attachment in addition to anything else
that might help us fixing this issue.
==========
#10 0xb23d9bb1 in GFTools::invertMatrix (mat=..., inv=...)
    at /home/lavezzi/test_dev/trunk/genfit/GFTools.cxx:262

#11 0xb23d0478 in GFKalman::chi2Increment (this=0x8aa5d28, r=..., H=...,
cov=..., V=...)
at /home/lavezzi/test_dev/trunk/genfit/GFKalman.cxx:200
#12 0xb23d14f5 in GFKalman::processHit (this=0x8aa5d28, tr=0x10f55e68,
ihit=1, irep=0, direction=-1)
at /home/lavezzi/test_dev/trunk/genfit/GFKalman.cxx:313
#13 0xb23d02bd in GFKalman::fittingPass (this=0x8aa5d28, trk=0x10f55e68,
direction=-1) at /home/lavezzi/test_dev/trunk/genfit/GFKalman.cxx:169
#14 0xb23cfb0b in GFKalman::processTrack (this=0x8aa5d28, trk=0x10f55e68)
at /home/lavezzi/test_dev/trunk/genfit/GFKalman.cxx:77
#15 0xafb38f01 in PndRecoKalmanFit::Fit (this=0x8aa5cf8, tBefore=
0xecb6e08, PDG=13)
at /home/lavezzi/test_dev/trunk/GenfitTools/recotasks/PndRecoKalmanFit.cxx: 282
#16 0xafb3eabd in PndRecoKalmanTask::Exec (this=0x8a9d638,
opt=0xb35949c0 "")
at /home/lavezzi/test_dev/trunk/GenfitTools/recotasks/PndRecoKalmanTask.cxx :122
#17 0xb717f5c9 in TTask::ExecuteTasks (this=0x808ca90,
option=0xb35949c0 "")
at /home/lavezzi/fairsoft5/tools/root/core/base/src/TTask.cxx:312
#18 0xb717f3df in TTask::ExecuteTask (this=0x808ca90,
option=0xb35949c0 "")
at /home/lavezzi/fairsoft5/tools/root/core/base/src/TTask.cxx:275
#19 0xb34ebb99 in FairRunAna::Run (this=0x844ff00, Ev_start=0,
Ev_end=2000) at /home/lavezzi/test_dev/trunk/base/FairRunAna.cxx:272
==========

when running the Kalman...

However if I use an older revision it works... I saw it on a run of low momentum single track muons and one of electrons (below 1 GeV/c).
...I hope this will not affect channel reconstruction...
Lia.

Subject: Re: UPDATE: TPC MVD and GEM correlators
Posted by Felix Boehmer on Sat, 18 Jun 2011 12:59:07 GMT
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Hi Lia,

Quote:Do you mean the protection against low momenta? I removed it some months ago since we fixed the realated problem in GEANE (or at lest I thought it was fixed...). I am really sorry if this is the cause of the crash, but I really cannot understand why GEANE started to crash again on low momenta after several months of good work.

Yes, it seems that this was the problem. After re-activating these checks I haven't seen any more crashes inside the extrapolations. I will investigate in more details when I have time (whatever this means).

Subject: Re: UPDATE: TPC MVD and GEM correlators
Posted by StefanoSpataro on Sat, 18 Jun 2011 18:16:16 GMT
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Felix Boehmer wrote on Sat, 18 June 2011 02:22Hi Dima,

Quote:PndTpcGas: Reading data file: NEON-90_CO2-10_B2_PRES1013.asc
Fatal in <PndTpcGas::PndTpcGas>: Input File is not found

I had the same thing before - has there been some change to the param file recently? Stefano? It was working yesterday, and now the files aren't looked up in the tpc folder anymore, but in the trunk .... This has to be solved! Otherwise we need some links lying in trunk/ ...

I had the same problem, and I solved changing the clusterization in digi copying the version of the old reco macro -> I suppose some parameter was not stored somewhere because of some flag.
However, the macros are taking all the params by default by all.par, but the .asc files are taking directly from the tpc folder. In all.par there are only the corresponding tpc.par parameters.
I think it just a matter to check the launched macros, to find the "missing" option. When the clusterization was taked out from the reco, something was still missing in the digi, I suppose.

Subject: Re: UPDATE: TPC MVD and GEM correlators
Posted by Dima Melnychuk on Sat, 18 Jun 2011 22:11:50 GMT
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Hi all,

I didn't manage to overcome the problem with

PndTpcGas: Reading data file: NEON-90_CO2-10_B2_PRES1013.asc
Fatal in <PndTpcGas::PndTpcGas>: Input File is not found

in other way than returning PndTpcClusterFinderTask to tpc reco macro.

But than I tried to test the task PndGFTrackToPndTrackConvertorTask for GFTrack -> PndTrack conversion. I put this task to another macro which executed after reco macro and it crashed but this time it was more verbose:

*** Break *** segmentation violation

==========

There was a crash.
This is the entire stack trace of all threads:

```
==========================================================
#0  0x00007f3c94bb59e5 in waitpid () from /lib/libc.so.6
#1  0x00007f3c94b55e11 in do_system () from /lib/libc.so.6
#2  0x00007f3c96c99dc6 in TUnixSystem::StackTrace ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#3  0x00007f3c96c9969c in TUnixSystem::DispatchSignals ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#4  <signal handler called>
#5  0x00007f3c8379730f in FairGeanePro::PropagateFromPlane (
    this=0x100000000000000, v1=
0x7fff8ab90990, v2=
0x7fff8ab90960)
    at /d/panda02/dmelnych/pandaroot/pandaroot/geane/FairGeanePro.cxx:384
#6  0x00007f3c883815cf in GeaneTrackRep::extrapolate (this=0xd398710,
    pl=
0x7fff8ab92120, statePred=
0x7fff8ab90f70, covPred=
0x7fff8ab90e10)
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/GeaneTrack
Rep.cxx:158
#7  0x00007f3c8837f796 in GeaneTrackRep::extrapolate (this=0xd398710,
    pl=
0x7fff8ab92120, statePred=
0x7fff8ab90f70)
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/GeaneTrack
Rep.cxx:133
#8  0x00007f3c8837b4b0 in GeaneTrackRep::getMom (this=0xd398710,
    pl=
0x7fff8ab92120)
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/GeaneTrack
Rep.cxx:470
#9  0x00007f3c881569cd in GenfitTrack2PndTrack (tr=0x786ec20)
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/adapters/PndGenfitAdapters.cxx:84
#10 0x00007f3c812cd69e in PndGFTrackToPndTrackConvertorTask::Exec (
    this=0x2f63eb0, opt=0x7f3c8b61cf00 "")
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/recotasks/PndGFTrackToPndTrackCo
nvertorTask.cxx:82
#11 0x00007f3c96c20bb0 in TTask::ExecuteTasks ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#12 0x00007f3c96c1fecb in TTask::ExecuteTask ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#13 0x00007f3c8b56854b in FairRunAna::Run (this=0x1e5ae80, Ev_start=0,
    Ev_end=10)
    at /d/panda02/dmelnych/pandaroot/pandaroot/base/FairRunAna.cxx:272
#14 0x00007f3c8b5c002a in G__FairDict_883_0_5 (result7=0x7fff8ab9edb0,
    funcname=0x1e58060 "", libp=0x7fff8ab943a0, hash=0)
    at /d/panda02/dmelnych/pandaroot/build_lenny64/base/FairDict.cxx:13242
```

#15 0x00007f3c960dc644 in Cint::G__ExceptionWrapper ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#16 0x00007f3c9618e560 in G__execute_call ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#17 0x00007f3c9618f369 in G__call_cppfunc ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#18 0x00007f3c9616a645 in G__interpret_func ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#19 0x00007f3c96157e38 in G__getfunction ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#20 0x00007f3c9624a63f in G__getstructmem ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#21 0x00007f3c96243a1e in G__getvariable ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#22 0x00007f3c9612af2f in G__getitem ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#23 0x00007f3c9612ef5c in G__getexpr ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#24 0x00007f3c961bbbc4 in G__exec_statement ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#25 0x00007f3c96116f16 in G__exec_tempfile_core ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#26 0x00007f3c961171db in G__exec_tempfile ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#27 0x00007f3c961cf099 in G__process_cmd ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#28 0x00007f3c96c56315 in TCint::ProcessLine ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#29 0x00007f3c96c55763 in TCint::ProcessLineSynch ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#30 0x00007f3c96baaf70 in TApplication::ExecuteFile ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#31 0x00007f3c96ba8ab8 in TApplication::ProcessLine ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#32 0x00007f3c95a43545 in TRint::HandleTermInput ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libRint.so.5.29
#33 0x00007f3c96c97804 in TUnixSystem::CheckDescriptors ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#34 0x00007f3c96c97e21 in TUnixSystem::DispatchOneEvent ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#35 0x00007f3c96c0ef66 in TSystem::InnerLoop ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#36 0x00007f3c96c1120c in TSystem::Run ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#37 0x00007f3c96ba678f in TApplication::Run ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#38 0x00007f3c95a45554 in TRint::Run ()
  from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libRint.so.5.29
#39 0x000000000040117d in main ()
==========

```
The lines below might hint at the cause of the crash.
If they do not help you then please submit a bug report at
http://root.cern.ch/bugs. Please post the ENTIRE stack trace
from above as an attachment in addition to anything else
that might help us fixing this issue.
==========================================================
#5  0x00007f3c8379730f in FairGeanePro::PropagateFromPlane (
    this=0x100000000000000, v1=
0x7fff8ab90990, v2=
0x7fff8ab90960)
    at /d/panda02/dmelnych/pandaroot/pandaroot/geane/FairGeanePro.cxx:384
#6  0x00007f3c883815cf in GeaneTrackRep::extrapolate (this=0xd398710,
    pl=
0x7fff8ab92120, statePred=
0x7fff8ab90f70, covPred=
0x7fff8ab90e10)
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/GeaneTrack
Rep.cxx:158
#7  0x00007f3c8837f796 in GeaneTrackRep::extrapolate (this=0xd398710,
    pl=
0x7fff8ab92120, statePred=
0x7fff8ab90f70)
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/GeaneTrack
Rep.cxx:133
#8  0x00007f3c8837b4b0 in GeaneTrackRep::getMom (this=0xd398710,
    pl=
0x7fff8ab92120)
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/GeaneTrack
Rep.cxx:470
#9  0x00007f3c881569cd in GenfitTrack2PndTrack (tr=0x786ec20)
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/adapters/PndGenfitAdapters.cxx:84
#10 0x00007f3c812cd69e in PndGFTrackToPndTrackConvertorTask::Exec (
    this=0x2f63eb0, opt=0x7f3c8b61cf00 "")
    at
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/recotasks/PndGFTrackToPndTrackCo
nvertorTask.cxx:82
#11 0x00007f3c96c20bb0 in TTask::ExecuteTasks ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#12 0x00007f3c96c1fecb in TTask::ExecuteTask ()
   from /misc/cbmsoft/Lenny64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#13 0x00007f3c8b56854b in FairRunAna::Run (this=0x1e5ae80, Ev_start=0,
    Ev_end=10)
    at /d/panda02/dmelnych/pandaroot/pandaroot/base/FairRunAna.cxx:272
==========================================================
```

So indeed it was not memory probelm. But at this point I'm stuck.

Dima

Subject: Re: UPDATE: TPC MVD and GEM correlators
Posted by Lia Lavezzi on Sun, 19 Jun 2011 10:06:54 GMT
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Hi Dima,

#5 0x00007f3c8379730f in FairGeanePro::PropagateFromPlane (
   this=0x100000000000000, v1=
0x7fff8ab90990, v2=
0x7fff8ab90960)
   at /d/panda02/dmelnych/pandaroot/pandaroot/geane/FairGeanePro.cxx:384

Here GEANE just sets up the starting plane so it would be useful to see which numbers are given as input to PropagateFromPlane, just to see if they identify well a plane or not.
Lia.

Subject: Re: UPDATE: TPC MVD and GEM correlators
Posted by Dima Melnychuk on Sun, 19 Jun 2011 22:48:06 GMT
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Dear colleagues,

I want to summarize briefly the status of GFTrack to PndTrack conversion.
My last attempt was to perform converion from GFTrack to PndTrack using PndGFTrackToPndTrackConvertorTask in separate macro. And as I have written in my previous post it ended with error:

#5 0x00007f3c8379730f in FairGeanePro::PropagateFromPlane (
   this=0x100000000000000, v1=
0x7fff8ab90990, v2=
0x7fff8ab90960)
   at /d/panda02/dmelnych/pandaroot/pandaroot/geane/FairGeanePro.cxx:384

Origin of this error was that GeaneTrackRep contained non persistent data member FairGeanePro *_geane and reading GFtrack from root file it was udefined, but in turns was used during conversion in PndGenfitAdapters.cxx .
So the conclusion is that conversion should be performed in the same macro as reconstruction.

But here another problem arrise. My initial idea was that it's in some way memory problem, but it looks it's not the case. I observed that crush happend in the moment when the memory still not full.

So it looks like:

GFException thrown with excString:
GEANE propagation failed
in line: 204 in file:
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/GeaneTrackRep.cxx
with fatal flag 0
GFException thrown with excString:
GeaneTrackRep: PROTECT AGAINST LOW MOMENTA
in line: 178 in file:
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/GeaneTrackRep.cxx
with fatal flag 0
RKTrackRep::RKutta ==> Too long extrapolation requested : 14096.1 cm !
X = 39.098 Y = 9.89889 Z = 117.621 COSx = -0.958658 COSy = -0.284551 COSz = 0.00246591
Destination X = -0.000
GFException thrown with excString:
RKTrackRep::Extrap ==> Runge Kutta propagation failed
in line: 997 in file:
/d/panda02/dmelnych/pandaroot/pandaroot/GenfitTools/trackrep/RKTrackRep/RKTrackRep.cxx
with fatal flag 0
Fitting done
Error: Symbol #include is not defined in current scope run_reco_tpc_evt.C:145:
Error: Symbol exception is not defined in current scope run_reco_tpc_evt.C:145:
Syntax Error: #include <exception> run_reco_tpc_evt.C:145:
Error: Symbol G__exception is not defined in current scope run_reco_tpc_evt.C:145:
Error: type G__exception not defined
FILE:/d/panda02/dmelnych/pandaroot/pandaroot/macro/run/tdrct/eta_c/./run_reco_tpc_evt.C
LINE:145
*** Interpreter error recovered ***

My observation is that in the cases I observed, the crash is after the message:

RKTrackRep::RKutta ==> Too long extrapolation requested

This crash happen not every event but sufficiently often (after 3-5 events) that conversion cannot be reasonably performed.

Dima

Subject: Re: UPDATE: TPC MVD and GEM correlators
Posted by Dima Melnychuk on Mon, 20 Jun 2011 07:30:52 GMT
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Hi all,

once again concerning GFTrack to PndTrack conversion

Here I attached slightly modified version of PndGFTrackToPndTrackConvertorTask, which catch an exception

*** PndGFTrackToPndTrackConvertorTask::Exec Genfit Exception: GFException thrown with excString:
GEANE propagation failed
in line: 204 in file:
/home/dimam/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/GeaneTrackRep.cxx
with fatal flag 0

and macro at least is running without interruption.
But still I didn't have time to estimate obtained results.

So could somebody commit the changes to svn?

Dima

File Attachments

1) PndGenfitAdapters.cxx, downloaded 473 times

Subject: Re: UPDATE: TPC MVD and GEM correlators
Posted by Dima Melnychuk on Mon, 20 Jun 2011 07:45:16 GMT
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Correction to my previous post,

I have attached there the wrong file.

Here is the correct one.

Dima

File Attachments

1) PndGFTrackToPndTrackConvertorTask.cxx, downloaded 492 times

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