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Subject: Re: TPC MVD and GEM correlators  
Posted by [Dima Melnychuk](#) on Thu, 16 Jun 2011 11:05:01 GMT  
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Hi Felix,

I tried TPC reconstruction macro (I adapted it as run\_reco\_tpc\_evt.C in /macro/run/tdtct/eta\_c/)

```
run_sim_tpc_evt.C
run_digi_tpc_evt.C
run_reco_tpc_evt.C
```

and immediately have the following crash from the KalmanTask:

Toggle Spoiler

```
-----
GException thrown with excString:
GEANE propagation failed
in line: 306 in file:
/home/dimam/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/Geane
TrackRep.cxx
with fatal flag 0
```

```
*** Break *** floating point exception
```

```
=====
There was a crash (kSigFloatingException).
This is the entire stack trace of all threads:
=====
```

```
#0 0x00de8416 in __kernel_vsyscall ()
#1 0x044eb473 in __waitpid_nocancel () from /lib/libc.so.6
#2 0x04487753 in do_system () from /lib/libc.so.6
#3 0x0057e82d in system () from /lib/libpthread.so.0
#4 0x007fc70d in TUnixSystem::Exec (this=0x886a470,
    shellcmd=0xf45d7d8 "/home/dimam/pandaroot/fairsoft/tools/root/etc/gdb-backtrace.sh 4672
1>&2")
    at /home/dimam/pandaroot/fairsoft/tools/root/core/unix/src/TUnixSystem.cxx: 2036
#5 0x007fcf58 in TUnixSystem::StackTrace (this=0x886a470)
    at /home/dimam/pandaroot/fairsoft/tools/root/core/unix/src/TUnixSystem.cxx: 2265
#6 0x007faa61 in TUnixSystem::DispatchSignals (this=0x886a470,
    sig=kSigFloatingException)
    at /home/dimam/pandaroot/fairsoft/tools/root/core/unix/src/TUnixSystem.cxx: 1162
#7 0x007f8bed in SigHandler (sig=kSigFloatingException)
    at /home/dimam/pandaroot/fairsoft/tools/root/core/unix/src/TUnixSystem.cxx: 362
#8 0x008002a7 in sighandler (sig=8)
    at /home/dimam/pandaroot/fairsoft/tools/root/core/unix/src/TUnixSystem.cxx: 3552
#9 <signal handler called>
#10 0x036b778d in FairGeanePro::Propagate (this=0xe9be450, TStart=0xbfe6cb18,
    TEnd=0xbfe6c6f0, PDG=321)
```

```

    at /home/dimam/pandaroot/pandaroot/geane/FairGeanePro.cxx:224
#11 0x07a6c747 in GeaneTrackRep::extrapolateToPoint (this=0xf454a08, pos=...,
    poca=..., dirInPoca=...)
    at /home/dimam/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/Geane
TrackRep.cxx:304
#12 0x0360e9b1 in GFSpacepointHitPolicy::detPlane (this=0xf453f78, hit=
    0xf453d70, rep=0xf454a08)
    at /home/dimam/pandaroot/pandaroot/genfit/GFSpacepointHitPolicy.cxx:95
#13 0x04ec431d in GFRecoHitIfc<GFSpacepointHitPolicy>::getDetPlane (
    this=0xf453d70, rep=0xf454a08)
    at /home/dimam/pandaroot/pandaroot/genfit/GFRecoHitIfc.h:80
#14 0x036085c3 in GFKalman::processHit (this=0xbfe6e9f0, tr=0xf452140,
    ihit=10, irep=1, direction=-1)
    at /home/dimam/pandaroot/pandaroot/genfit/GFKalman.cxx:269
#15 0x036079fc in GFKalman::fittingPass (this=0xbfe6e9f0, trk=0xf452140,
    direction=-1) at /home/dimam/pandaroot/pandaroot/genfit/GFKalman.cxx:168
#16 0x0360737e in GFKalman::processTrack (this=0xbfe6e9f0, trk=0xf452140)
    at /home/dimam/pandaroot/pandaroot/genfit/GFKalman.cxx:76
#17 0x073b646f in KalmanTask::Exec (this=0x93ae7c0, opt=0x2bea908 "")
    at /home/dimam/pandaroot/pandaroot/recotasks/KalmanTask.cxx:264
#18 0x0077ef31 in TTask::ExecuteTasks (this=0x8886658, option=0x2bea908 "")

    at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TTask.cxx:312
#19 0x0077ed47 in TTask::ExecuteTask (this=0x8886658, option=0x2bea908 "")

    at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TTask.cxx:275
#20 0x02b3f557 in FairRunAna::Run (this=0x88865e0, Ev_start=0, Ev_end=10)

    at /home/dimam/pandaroot/pandaroot/base/FairRunAna.cxx:272
#21 0x02b94a95 in G__FairDict_883_0_5 (result7=0xbfe79e88,
    funcname=0x8884b78 "", libp=0xbfe6f844, hash=0)
    at /home/dimam/pandaroot/build/base/FairDict.cxx:13234
#22 0x00e6b70f in Cint::G__ExceptionWrapper (
    funcp=0x2b949a4 <G__FairDict_883_0_5(G__value*, char const*, G__param*, int)>,
    result7=0xbfe79e88, funcname=0x8884b78 "", libp=0xbfe6f844, hash=0)

    at cint/cint/src/Api.cxx:393
#23 0x00f3754b in G__execute_call (result7=0xbfe79e88, libp=0xbfe6f844,

    ifunc=0x8884b78, ifn=0) at cint/cint/src/newlink.cxx:2406

#24 0x00f37d8a in G__call_cppfunc (result7=0xbfe79e88, libp=0xbfe6f844,

    ifunc=0x8884b78, ifn=0) at cint/cint/src/newlink.cxx:2610

#25 0x00f13a15 in G__interpret_func (result7=0xbfe79e88,

    funcname=0x8878ca0 "Run", libp=0xbfe6f844, hash=309, p_ifunc=0x8884b78,

    funcmatch=1, memfunc_flag=1) at cint/cint/src/ifunc.cxx:5795

```

```

#26 0x00eefb49 in G__getfunction (item=0x8875f0e "Run(0,nEvents)",
    known3=0xbfe7d36c, memfunc_flag=1) at cint/cint/src/func.cxx:2665

#27 0x010157b9 in G__getstructmem (store_var_type=112, varname=...,
    membername=0x8875f0e "Run(0,nEvents)", memnamesize=2147483647,
    tagname=0x8876718 "fRun", known2=0xbfe7d36c, varglobal=0x10d83a0, objptr=2)
    at cint/cint/src/var.cxx:6804
#28 0x01006707 in G__getvariable (item=0x8875f08 "fRun->Run(0,nEvents)",
    known=0xbfe7d36c, varglobal=0x10d83a0, varlocal=0x0)
    at cint/cint/src/var.cxx:5390
#29 0x00edfcf1 in G__getitem (item=0x8875f08 "fRun->Run(0,nEvents)")
    at cint/cint/src/expr.cxx:1906
#30 0x00edd760 in G__getexpr (expression=0x8893d48 "fRun->Run(0,nEvents)")
    at cint/cint/src/expr.cxx:1488
#31 0x00f678cb in G__exec_function (statement=..., pc=0xbfe7f1f4,
    piout=0xbfe7f1f0, plargestep=0xbfe7f1e8, presult=0xbfe7f170)
    at cint/cint/src/parse.cxx:645
#32 0x00f77fda in G__exec_statement (mparen=0xbfe7f454)
    at cint/cint/src/parse.cxx:7372
#33 0x00eb16f7 in G__exec_tempfile_core (
    file=0x8893540 "
/home/dimam/pandaroot/pandaroot/macro/run/tdrct/eta_c/./run_reco_tpc_evt.C ", fp=0x0) at
cint/cint/src/debug.cxx:265

#34 0x00eb3032 in G__exec_tempfile (
    file=0x8893540 "
/home/dimam/pandaroot/pandaroot/macro/run/tdrct/eta_c/./run_reco_tpc_evt.C ") at
cint/cint/src/debug.cxx:813

#35 0x00f86482 in G__process_cmd (
    line=0x8c1b938 ".x
/home/dimam/pandaroot/pandaroot/macro/run/tdrct/eta_c/./run_reco_tpc_evt.C ",
    prompt=0x886d524 "", more=0x886d51c, err=0xbfe804c4,
    rslt=0xbfe80490) at cint/cint/src/pause.cxx:3170

#36 0x007b7b87 in TCint::ProcessLine (this=0x886d4f0,

```

```

    line=0x8c1b938 ".x
/home/dimam/pandaroot/pandaroot/macro/run/tdrct/eta_c/./run_reco_tpc_evt.C ", error=0x0)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/meta/src/TCint.cxx:522

#37 0x007b80fe in TCint::ProcessLineSynch (this=0x886d4f0,

    line=0x8c1b938 ".x
/home/dimam/pandaroot/pandaroot/macro/run/tdrct/eta_c/./run_reco_tpc_evt.C ", error=0x0)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/meta/src/TCint.cxx:601

#38 0x0070c0ee in TApplication::ExecuteFile (

    file=0x8c0d2e3 "run_reco_tpc_evt.C", error=0x0, keep=false)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TApplication.cxx :1035

#39 0x0070b99e in TApplication::ProcessFile (this=0x8932c18,

    file=0x8c0d2e3 "run_reco_tpc_evt.C", error=0x0, keep=false)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TApplication.cxx :911

#40 0x0070b8d3 in TApplication::ProcessLine (this=0x8932c18,

    line=0x8c0d2e0 ".x run_reco_tpc_evt.C", sync=false, err=0x0)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TApplication.cxx :884

#41 0x0011f5ad in TRint::HandleTermInput (this=0x8932c18)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/rint/src/TRint.cxx:561

#42 0x0011d85c in TTermInputHandler::Notify (this=0x8bc6730)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/rint/src/TRint.cxx:129

#43 0x00120956 in TTermInputHandler::ReadNotify (this=0x8bc6730)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/rint/src/TRint.cxx:121

#44 0x007fadb1 in TUnixSystem::CheckDescriptors (this=0x886a470)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/unix/src/TUnixSystem.cxx: 1264

#45 0x007fa162 in TUnixSystem::DispatchOneEvent (this=0x886a470,

    pendingOnly=false)
    at /home/dimam/pandaroot/fairsoft/tools/root/core/unix/src/TUnixSystem.cxx: 971

#46 0x0076fb69 in TSystem::InnerLoop (this=0x886a470)

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    at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TSystem.cxx:406
#47 0x0076f93b in TSystem::Run (this=0x886a470)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TSystem.cxx:356
#48 0x0070c266 in TApplication::Run (this=0x8932c18, retn=false)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TApplication.cxx :1051
#49 0x0011edd1 in TRint::Run (this=0x8932c18, retn=false)

    at /home/dimam/pandaroot/fairsoft/tools/root/core/rint/src/TRint.cxx:433
#50 0x08048ef3 in main (argc=1, argv=0xbfe83494)

    at /home/dimam/pandaroot/fairsoft/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 0x036b778d in FairGeanePro::Propagate (this=0xe9be450, TStart=0xbfe6cb18,
    TEnd=0xbfe6c6f0, PDG=321)
    at /home/dimam/pandaroot/pandaroot/geane/FairGeanePro.cxx:224
#11 0x07a6c747 in GeaneTrackRep::extrapolateToPoint (this=0xf454a08, pos=...,
    poca=..., dirInPoca=...)
    at /home/dimam/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/Geane
TrackRep.cxx:304
#12 0x0360e9b1 in GFSpacepointHitPolicy::detPlane (this=0xf453f78, hit=
    0xf453d70, rep=0xf454a08)
    at /home/dimam/pandaroot/pandaroot/genfit/GFSpacepointHitPolicy.cxx:95
#13 0x04ec431d in GFRecoHitLfc<GFSpacepointHitPolicy>::getDetPlane (
    this=0xf453d70, rep=0xf454a08)
    at /home/dimam/pandaroot/pandaroot/genfit/GFRecoHitLfc.h:80
#14 0x036085c3 in GFKalman::processHit (this=0xbfe6e9f0, tr=0xf452140,
    ihit=10, irep=1, direction=-1)
    at /home/dimam/pandaroot/pandaroot/genfit/GFKalman.cxx:269
#15 0x036079fc in GFKalman::fittingPass (this=0xbfe6e9f0, trk=0xf452140,
    direction=-1) at /home/dimam/pandaroot/pandaroot/genfit/GFKalman.cxx:168
#16 0x0360737e in GFKalman::processTrack (this=0xbfe6e9f0, trk=0xf452140)
    at /home/dimam/pandaroot/pandaroot/genfit/GFKalman.cxx:76
#17 0x073b646f in KalmanTask::Exec (this=0x93ae7c0, opt=0x2bea908 "")
    at /home/dimam/pandaroot/pandaroot/recotasks/KalmanTask.cxx:264
#18 0x0077ef31 in TTask::ExecuteTasks (this=0x8886658, option=0x2bea908 "")

```

```
at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TTask.cxx:312
#19 0x0077ed47 in TTask::ExecuteTask (this=0x8886658, option=0x2bea908 "")
at /home/dimam/pandaroot/fairsoft/tools/root/core/base/src/TTask.cxx:275
#20 0x02b3f557 in FairRunAna::Run (this=0x88865e0, Ev_start=0, Ev_end=10)
at /home/dimam/pandaroot/pandaroot/base/FairRunAna.cxx:272
=====
```

Root >

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From the log it looks like it's the first event and third call of KalmanTask, i.e. after PndTpcGEMCorrelatorTask.

And I have to admit that numerous messages from the floating point exceptions

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```
GFException thrown with excString:
GEANE propagation failed
in line: 306 in file:
/home/dimam/pandaroot/pandaroot/GenfitTools/trackrep/GeaneTrackRep/Geane
TrackRep.cxx
with fatal flag 0
ABORT
-----
```

seriously complicates reading the log, but Felix mentioned them already.

Dima

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