
Subject: Riemann track finder crash.

Posted by [Lia Lavezzi](#) on Thu, 13 Jan 2011 18:59:24 GMT

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Hallo Riemann experts,

by running the track reconstruction I have sometimes a crash in the Riemann track with this message:

*** Break *** floating point exception

=====
There was a crash (kSigFloatingException).

This is the entire stack trace of all threads:

=====
#0 0x005ff7a2 in _dl_sysinfo_int80 () from /lib/ld-linux.so.2
#1 0x004cd533 in __waitpid_nocancel () from /lib/tls/libc.so.6
#2 0x00476869 in do_system () from /lib/tls/libc.so.6
#3 0x0043bb8d in system () from /lib/tls/libpthread.so.0
#4 0x00909aa0 in TUnixSystem::Exec (this=0x9b017d0,
 shellcmd=0xad8090 "/home/lavezzi/fairsoft4/tools/root/etc/gdb-backtrace.sh 21181 1>&2")
at core/unix/src/TUnixSystem.cxx:1978
#5 0x0090a290 in TUnixSystem::StackTrace (this=0x9b017d0)
at core/unix/src/TUnixSystem.cxx:2188
#6 0x00907d0f in TUnixSystem::DispatchSignals (this=0x9b017d0,
 sig=kSigFloatingException) at core/unix/src/TUnixSystem.cxx:1106
#7 0x00905b25 in SigHandler (sig=kSigFloatingException)
at core/unix/src/TUnixSystem.cxx:350
#8 0x0090d29e in sighandler (sig=8) at core/unix/src/TUnixSystem.cxx:3428
#9 <signal handler called>
#10 0x034b6a6e in PndRiemannTrack::r (this=0xbff03930)
at /home/lavezzi/test_dev/original/cfr/trunk/PndTools/riemannfit/PndRiemann Track.cxx:322
#11 0x034b0d1f in PndRiemannHit::calcPosOnTrk (this=0xb48f820, trk=0xbff03930)
at /home/lavezzi/test_dev/original/cfr/trunk/PndTools/riemannfit/PndRiemann Hit.cxx:94
#12 0x034b6c63 in PndRiemannTrack::szFit (this=0xbff03930, withErrorCalc=false)
at /home/lavezzi/test_dev/original/cfr/trunk/PndTools/riemannfit/PndRiemann Track.cxx:341
#13 0x03e34b82 in PndMvdRiemannTrackFinder::CheckSZ (this=0xbff05120, aTrack=
 {<TObject> = {_vptr.TObject = 0x350ee68, fUniqueID = 0, fBits = 33554432, static
fgDtorOnly = 0, static fgObjectStat = false, static fgIsA = 0x9f0ad58}, fn = {<TObject> =
 {<TObject> = {_vptr.TObject = 0x42436c8, fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static
fgObjectStat = false, static fgIsA = 0x9f0ad58}, fNrows = 3, fRowLwb = 0, fElements =
0xbff03954, fDataStack = {1, 0, 0, 2.1219957909652723e-314, 0}, flsOwner = true, static fgIsA
= 0x0}, fc = 0.035000000149011612, fm = 3.9922684473586418e-297, ft =
6.922459577553524e-297, fmError = 2.0216365250561057e-296, ftError =
-1.0202103310482471, fChi2 = 1.045357182469336e-296, fFitDone = true, fSZFitDone =
false, fErrorCalcDone = false, fVertexCut = 0.5, fHits =
{<std::_Vector_base<PndRiemannHit,std::allocator<PndRiemannHit> >> = { _M_impl =
{<std::allocator<PndRiemannHit>> = {<__gnu_cxx::new_allocator<PndRiemannHit>> = {<No
data fields>}, <No data fields>}, _M_start = 0xb48f820, _M_finish = 0xb48fc94,
_M_end_of_storage = 0xb48fc94}}, <No data fields>}, fStartAlpha = 4.6979569924079758,
fStopAlpha = 4.6831086491987888, fav = {<TObject> = {<TObject> = {_vptr.TObject = 0x42436c8,

```
fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static fgObjectStat = false, static fgIsA
= 0x9f0ad58}, fNrows = 3, fRowLwb = 0, fElements = 0xbff039f0, fDataStack =
{-0.035000000149011612, -1.7383333444595337, 3.2854499951307994,
5.9235794629144927, 0}, flsOwner = true, static fgIsA = 0x0}, fweight = 179999.98903990525,
fcovPlane = {<TMatrixTBase<Double_t>> = {<TObject> = {_vptr.TObject = 0x4243b68,
fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static fgObjectStat = false, static fgIsA
= 0x9f0ad58}, fNrows = 4, fNcols = 4, fRowLwb = 0, fColLwb = 0, fNelems = 16, fRowIndex =
0, fTol = 2.2204460492503131e-16, flsOwner = true, static fgIsA = 0xa4d6968}, fDataStack =
{0 <repeats 16 times>, 5.0266355802633359e-315, 0, 0, 1.1289913039491615e+238,
-1.9813234410642987e+94, 5.2814326991555754e-315, 0, 0, -1.9813234193646044e+94},
fElements = 0xbff03a54, static fgIsA = 0xa4d65a8}, fjacRXY = {<TMatrixTBase<Double_t>> =
{<TObject> = {_vptr.TObject = 0x4243b68, fUniqueID = 0, fBits = 33554432, static fgDtorOnly
= 0, static fgObjectStat = false, static fgIsA = 0x9f0ad58}, fNrows = 3, fNcols = 4, fRowLwb = 0,
fColLwb = 0, fNelems = 12, fRowIndex = 0, fTol = 2.2204460492503131e-16, flsOwner = true,
static fgIsA = 0xa4d6968}, fDataStack = {0 <repeats 13 times>, 0.146856226920385, 0,
1.4808948657286232, 0, 0, 2.107374787828515, -0.21998401743940546,
-0.10319883947684999, 0, 0, 0, 0}, fElements = 0xbff03b50, static fgIsA = 0xa4d65a8},
fcovRXY = {<TMatrixTBase<Double_t>> = {<TObject> = {_vptr.TObject = 0x4243b68,
fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static fgObjectStat = false, static fgIsA
= 0x9f0ad58}, fNrows = 3, fNcols = 3, fRowLwb = 0, fColLwb = 0, fNelems = 9, fRowIndex = 0,
fTol = 2.2204460492503131e-16, flsOwner = true, static fgIsA = 0xa4d6968}, fDataStack = {0,
0, 0, 0, 0, 0, 0, 0, 0, 5.3052676116685071e-315, 0, 0, -1.3265114604256028e+80,
5.3023001694084248e-315, -3.757136560537412e-76, 1.58981824481683e-314, 0, 0, 0,
-1.3265114604256028e+80, 2.4248534976987006e-36, 1.5892438707765199e-314, 0, 0, 0},
fElements = 0xbff03c4c, static fgIsA = 0xa4d65a8}, fVerbose = 0, ftrefit = true, static fgIsA =
0xadf2160})
```

```
at /home/lavezzi/test_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannT
rackFinder.cxx:332
```

```
#14 0x03e344c4 in PndMvdRiemannTrackFinder::GetStartTracks (this=0xbff05120)
```

```
at /home/lavezzi/test_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannT
rackFinder.cxx:292
```

```
#15 0x03e325c2 in PndMvdRiemannTrackFinder::FindTracks (this=0xbff05120)
```

```
at /home/lavezzi/test_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannT
rackFinder.cxx:95
```

```
#16 0x03e2ef0b in PndMvdRiemannTrackFinderTask::Exec (this=0xa6ad520,
opt=0x26ec3d8 "")
```

```
at /home/lavezzi/test_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannT
rackFinderTask.cxx:120
```

```
#17 0x00878c72 in TTask::ExecuteTasks (this=0xa2bb2f8, option=0x26ec3d8 "")
```

```
at core/base/src/TTask.cxx:312
```

```
#18 0x00878a6d in TTask::ExecuteTask (this=0xa2bb2f8, option=0x26ec3d8 "")
```

```
at core/base/src/TTask.cxx:275
```

```
#19 0x02673ebc in FairRunAna::Run (this=0x9f026f0, Ev_start=0, Ev_end=10000)
```

```
at /home/lavezzi/test_dev/original/cfr/trunk/base/FairRunAna.cxx:281
```

```
#20 0x026bad66 in G__FairDict_793_0_5 (result7=0xbff105d0,
```

```
funcname=0xa2e9b78 "\001", libp=0xbff05f60, hash=0)
```

```
at /home/lavezzi/test_dev/original/cfr/trunk/cbuild/base/FairDict.cxx:11696
```

```
#21 0x00e3b6a3 in Cint::G__ExceptionWrapper (
```

```
funcp=0x26bacb2 <G__FairDict_793_0_5>, result7=0xbff105d0,
```

```
funcname=0xa2e9b78 "\001", libp=0xbff05f60, hash=0)
```

```
at cint/cint/src/Api.cxx:385
```

```
#22 0x00eef1a8 in G__execute_call (result7=0xbff105d0, libp=0xbff05f60,
```

```

ifunc=0xa2e9b78, ifn=0) at cint/cint/src/newlink.cxx:2332
#23 0x00eef8c8 in G__call_cppfunc (result7=0xbff105d0, libp=0xbff05f60,
    ifunc=0xa2e9b78, ifn=0) at cint/cint/src/newlink.cxx:2518
#24 0x00ecd957 in G__interpret_func (result7=0xbff105d0,
    funcname=0x9b37b20 "Run", libp=0xbff05f60, hash=309, p_ifunc=0xa2e9b78,
    funcmatch=1, memfunc_flag=1) at cint/cint/src/ifunc.cxx:5240
#25 0x00eb2a14 in G__getfunction (item=0x9a61c06 "Run(0,nEvents)",
    known3=0xbff1383c, memfunc_flag=1) at cint/cint/src/func.cxx:2423
#26 0x00fb6262 in G__getstructmem (store_var_type=112, varname=0x9a5fc80 "u",
    membername=0x9a61c06 "Run(0,nEvents)", tagname=0x9a82228 "fRun",
    known2=0xbff1383c, varglobal=0x106c540, objptr=2)
    at cint/cint/src/var.cxx:6591
#27 0x00fa9ece in G__getvariable (item=0x9a61c00 "fRun->Run(0,nEvents)",
    known=0xbff1383c, varglobal=0x106c540, varlocal=0x0)
    at cint/cint/src/var.cxx:5222
#28 0x00ea54c8 in G__getitem (item=0x9a61c00 "fRun->Run(0,nEvents)")
    at cint/cint/src/expr.cxx:1882
#29 0x00ea385b in G__getexpr (expression=0x9a5a590 "fRun->Run(0,nEvents)")
    at cint/cint/src/expr.cxx:1464
#30 0x00f18f4a in G__exec_function (statement=
0xbff15b20, pc=0xbff15b5c,
    piout=0xbff15b54, plargestep=0xbff15b44, presult=0xbff15af0)
    at cint/cint/src/parse.cxx:643
#31 0x00f26e06 in G__exec_statement (mparen=0xbff15bc0)
    at cint/cint/src/parse.cxx:7083
#32 0x00e7d23c in G__exec_tempfile_core (
    file=0x9a571d8 " /home/lavezzi/test_dev/original/cfr/trunk/macro/pid/.run_reco_sttcombi. C
", fp=0x0) at cint/cint/src/debug.cxx:250
#33 0x00e7e8da in G__exec_tempfile (
    file=0x9a571d8 " /home/lavezzi/test_dev/original/cfr/trunk/macro/pid/.run_reco_sttcombi. C
") at cint/cint/src/debug.cxx:798
#34 0x00f340d9 in G__process_cmd (
    line=0x9b347a0 ".X /home/lavezzi/fairsoft4/tools/root/etc/plugins/ROOT

```

Math

```

Minimizer/P070_TFumiliMinimizer.C", prompt=0x9b04a34 "", more=0x9b04a2c,
    err=0xbff1dddc, rslt=0xbff1dde0) at cint/cint/src/pause.cxx:3125
#35 0x008f3fd6 in TCint::ProcessLine (this=0x9b04a10,
    line=0x9b347a0 ".X /home/lavezzi/fairsoft4/tools/root/etc/plugins/ROOT

```

Math

```

Minimizer/P070_TFumiliMinimizer.C", error=0xbff20a14)
    at core/meta/src/TCint.cxx:419
#36 0x008f43ab in TCint::ProcessLineSynch (this=0x9b04a10,
    line=0x9b347a0 ".X /home/lavezzi/fairsoft4/tools/root/etc/plugins/ROOT

```

Math

```

Minimizer/P070_TFumiliMinimizer.C", error=0xbff20a14)
    at core/meta/src/TCint.cxx:486

```

```
#37 0x007f37d9 in TApplication::ExecuteFile (
    file=0xbff1e9b3 "run_reco_sttcombi.C", error=0xbff20a14, keep=false)
    at core/base/src/TApplication.cxx:977
#38 0x007f2ed0 in TApplication::ProcessFile (this=0x9b321d8,
    file=0xbff1e9b3 "run_reco_sttcombi.C", error=0xbff20a14, keep=false)
    at core/base/src/TApplication.cxx:853
#39 0x007f2dc7 in TApplication::ProcessLine (this=0x9b321d8,
    line=0xbff1e9b0 ".x run_reco_sttcombi.C", sync=false, err=0xbff20a14)
    at core/base/src/TApplication.cxx:826
#40 0x003e4100 in TRint::Run (this=0x9b321d8, retn=false)
    at core/rint/src/TRint.cxx:407
#41 0x08048df7 in main (argc=1, argv=0xbff20af4) at 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 0x034b6a6e in PndRiemannTrack::r (this=0xbff03930)
    at /home/lavezzi/test_dev/original/cfr/trunk/PndTools/riemannfit/PndRiemann Track.cxx:322
#11 0x034b0d1f in PndRiemannHit::calcPosOnTrk (this=0xb48f820, trk=0xbff03930)
    at /home/lavezzi/test_dev/original/cfr/trunk/PndTools/riemannfit/PndRiemann Hit.cxx:94
#12 0x034b6c63 in PndRiemannTrack::szFit (this=0xbff03930, withErrorCalc=false)
    at /home/lavezzi/test_dev/original/cfr/trunk/PndTools/riemannfit/PndRiemann Track.cxx:341
#13 0x03e34b82 in PndMvdRiemannTrackFinder::CheckSZ (this=0xbff05120, aTrack=
    {<TObject> = {_vptr.TObject = 0x350ee68, fUniqueID = 0, fBits = 33554432, static
fgDtorOnly = 0, static fgObjectStat = false, static fgIsA = 0x9f0ad58}, fn = {<TObject> =
    {_vptr.TObject = 0x42436c8, fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static
fgObjectStat = false, static fgIsA = 0x9f0ad58}, fNrows = 3, fRowLwb = 0, fElements =
    0xbff03954, fDataStack = {1, 0, 0, 2.1219957909652723e-314, 0}, flsOwner = true, static fgIsA
    = 0x0}, fc = 0.035000000149011612, fm = 3.9922684473586418e-297, ft =
    6.9224595775553524e-297, fmError = 2.0216365250561057e-296, ftError =
    -1.0202103310482471, fChi2 = 1.045357182469336e-296, fFitDone = true, fSZFitDone =
    false, fErrorCalcDone = false, fVertexCut = 0.5, fHits =
    {<std::_Vector_base<PndRiemannHit,std::allocator<PndRiemannHit> >> = {_M_impl =
    {<std::allocator<PndRiemannHit> > = {<__gnu_cxx::new_allocator<PndRiemannHit> > = {<No
    data fields>}, <No data fields>}, _M_start = 0xb48f820, _M_finish = 0xb48fc94,
    _M_end_of_storage = 0xb48fc94}}, <No data fields>}, fStartAlpha = 4.6979569924079758,
    fStopAlpha = 4.6831086491987888, fav = {<TObject> = {_vptr.TObject = 0x42436c8,
    fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static fgObjectStat = false, static fgIsA
    = 0x9f0ad58}, fNrows = 3, fRowLwb = 0, fElements = 0xbff039f0, fDataStack =
    {-0.035000000149011612, -1.7383333444595337, 3.2854499951307994,
    5.9235794629144927, 0}, flsOwner = true, static fgIsA = 0x0}, fweight = 179999.98903990525,
    fcovPlane = {<TMatrixTBase<Double_t> > = {<TObject> = {_vptr.TObject = 0x4243b68,
    fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static fgObjectStat = false, static fgIsA
    = 0x9f0ad58}, fNrows = 4, fNcols = 4, fRowLwb = 0, fColLwb = 0, fNelems = 16, fRowIndex =
    0, fTol = 2.2204460492503131e-16, flsOwner = true, static fgIsA = 0xa4d6968}, fDataStack =
    {0 <repeats 16 times>, 5.0266355802633359e-315, 0, 0, 1.1289913039491615e+238,
    -1.9813234410642987e+94, 5.2814326991555754e-315, 0, 0, -1.9813234193646044e+94},
```

```
fElements = 0xbff03a54, static fglsA = 0xa4d65a8}, fjacRXY = {<TMatrixTBase<Double_t>> =
{<TObject> = {_vptr.TObject = 0x4243b68, fUniqueID = 0, fBits = 33554432, static fgDtorOnly
= 0, static fgObjectStat = false, static fglsA = 0x9f0ad58}, fNrows = 3, fNcols = 4, fRowLwb = 0,
fColLwb = 0, fNelems = 12, fNrowIndex = 0, fTol = 2.2204460492503131e-16, flsOwner = true,
static fglsA = 0xa4d6968}, fDataStack = {0 <repeats 13 times>, 0.146856226920385, 0,
1.4808948657286232, 0, 0, 2.107374787828515, -0.21998401743940546,
-0.10319883947684999, 0, 0, 0, 0}, fElements = 0xbff03b50, static fglsA = 0xa4d65a8},
fcovRXY = {<TMatrixTBase<Double_t>> = {<TObject> = {_vptr.TObject = 0x4243b68,
fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static fgObjectStat = false, static fglsA
= 0x9f0ad58}, fNrows = 3, fNcols = 3, fRowLwb = 0, fColLwb = 0, fNelems = 9, fNrowIndex = 0,
fTol = 2.2204460492503131e-16, flsOwner = true, static fglsA = 0xa4d6968}, fDataStack = {0,
0, 0, 0, 0, 0, 0, 0, 0, 5.3052676116685071e-315, 0, 0, -1.3265114604256028e+80,
5.3023001694084248e-315, -3.757136560537412e-76, 1.58981824481683e-314, 0, 0, 0,
-1.3265114604256028e+80, 2.4248534976987006e-36, 1.5892438707765199e-314, 0, 0, 0},
fElements = 0xbff03c4c, static fglsA = 0xa4d65a8}, fVerbose = 0, ftrefit = true, static fglsA =
0xadf2160})
    at /home/lavezzi/test_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannT
rackFinder.cxx:332
#14 0x03e344c4 in PndMvdRiemannTrackFinder::GetStartTracks (this=0xbff05120)
    at /home/lavezzi/test_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannT
rackFinder.cxx:292
#15 0x03e325c2 in PndMvdRiemannTrackFinder::FindTracks (this=0xbff05120)
    at /home/lavezzi/test_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannT
rackFinder.cxx:95
#16 0x03e2ef0b in PndMvdRiemannTrackFinderTask::Exec (this=0xa6ad520,
    opt=0x26ec3d8 "")
    at /home/lavezzi/test_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannT
rackFinderTask.cxx:120
#17 0x00878c72 in TTask::ExecuteTasks (this=0xa2bb2f8, option=0x26ec3d8 "")
    at core/base/src/TTask.cxx:312
#18 0x00878a6d in TTask::ExecuteTask (this=0xa2bb2f8, option=0x26ec3d8 "")
    at core/base/src/TTask.cxx:275
#19 0x02673ebc in FairRunAna::Run (this=0x9f026f0, Ev_start=0, Ev_end=10000)
    at /home/lavezzi/test_dev/original/cfr/trunk/base/FairRunAna.cxx:281
=====
```

Could you please have a look at it? By looking in the code it seems a division by 0 in PndRiemannTrack.cxx.

Thank you in advance,
Lia.

Subject: Re: Riemann track finder crash.
 Posted by [Tobias Stockmanns](#) on Tue, 18 Jan 2011 14:39:01 GMT
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Dear Lia,

I uploaded a fixed version of PndRiemannTrack.

Can you please check if it is still crashing?

Thank's

Tobias

Subject: Re: Riemann track finder crash.
Posted by [Lia Lavezzi](#) on Tue, 18 Jan 2011 14:56:29 GMT
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Dear Tobias,
I just downloaded your changes and run the test: the crash has disappeared.
Thank you very much!
Lia.

Subject: Re: Riemann track finder crash.
Posted by [Susanna Costanza](#) on Tue, 18 Jan 2011 16:02:21 GMT
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Hi all,
when running the track reconstruction, it happens that the code crashes in PndRiemannHit.
The error message is the following:

```
*** Break *** floating point exception
=====
There was a crash (kSigFloatingException).
This is the entire stack trace of all threads:
=====
#0 0x002737a2 in _dl_sysinfo_int80 () from /lib/ld-linux.so.2
#1 0x0336a533 in __waitpid_nocancel () from /lib/tls/libc.so.6
#2 0x03313869 in do_system () from /lib/tls/libc.so.6
#3 0x0024fb8d in system () from /lib/tls/libpthread.so.0
#4 0x00759aa0 in TUnixSystem::Exec (this=0x8c687e8,
    shellcmd=0x11ffe868 "/data0/panda/fairsoft_jan10/tools/root/etc/gdb-backtrace.sh 3810
1>&2") at core/unix/src/TUnixSystem.cxx:1978
#5 0x0075a290 in TUnixSystem::StackTrace (this=0x8c687e8)
    at core/unix/src/TUnixSystem.cxx:2188
#6 0x00757d0f in TUnixSystem::DispatchSignals (this=0x8c687e8,
    sig=kSigFloatingException) at core/unix/src/TUnixSystem.cxx:1106
#7 0x00755b25 in SigHandler (sig=kSigFloatingException)
    at core/unix/src/TUnixSystem.cxx:350
#8 0x0075d29e in sighandler (sig=8) at core/unix/src/TUnixSystem.cxx:3428
#9 <signal handler called>
#10 0x028cd253 in PndRiemannHit::operator< (this=0xbfee94b0, aHit=
0x12102c30)
    at /data0/panda/pandaroot_jan11/trunk/PndTools/riemannfit/PndRiemannHit.h:6 0
#11 0x028cd5f3 in std::__insertion_sort<__gnu_cxx::__normal_iterator<PndRiemannHit*,
std::vector<PndRiemannHit, std::allocator<PndRiemannHit> > > > (&__first=
    {_M_current = 0x12102c30}, __last={_M_current = 0x121030a4})
```

```

at /usr/lib/gcc/i386-redhat-linux/3.4.6/../../../../include/c++/3.4.6/bits/ stl_algo.h:2117
#12 0x028cc89f in std::__final_insertion_sort<__gnu_cxx::__normal_iterator<PndRiemannHit*,
std::vector<PndRiemannHit, std::allocator<PndRiemannHit> > > > (
    __first={ _M_current = 0x12102c30}, __last={ _M_current = 0x121030a4})
at /usr/lib/gcc/i386-redhat-linux/3.4.6/../../../../include/c++/3.4.6/bits/ stl_algo.h:2203
#13 0x028cc019 in std::sort<__gnu_cxx::__normal_iterator<PndRiemannHit*,
std::vector<PndRiemannHit, std::allocator<PndRiemannHit> > > > (__first=
    { _M_current = 0x12102c30}, __last={ _M_current = 0x121030a4})
at /usr/lib/gcc/i386-redhat-linux/3.4.6/../../../../include/c++/3.4.6/bits/ stl_algo.h:2554
#14 0x028cb6b8 in PndRiemannTrack::sortHits (this=0xbfeeaa80)
at /data0/panda/pandaroot_jan11/trunk/PndTools/riemannfit/PndRiemannTrack.h :85
#15 0x028c36fe in PndRiemannTrack::refit (this=0xbfeeaa80, withErrorCalc=false)
at /data0/panda/pandaroot_jan11/trunk/PndTools/riemannfit/PndRiemannTrack.c xx:291
#16 0x03fba49d in PndMvdRiemannTrackFinder::GetStartTracks (this=0xbfeeaba00)
at /data0/panda/pandaroot_jan11/trunk/mvd/MvdTracking/PndMvdRiemannTrackFin
der.cxx:291
#17 0x03fb85c6 in PndMvdRiemannTrackFinder::FindTracks (this=0xbfeeaba00)
at /data0/panda/pandaroot_jan11/trunk/mvd/MvdTracking/PndMvdRiemannTrackFin
der.cxx:95
#18 0x03fb4f0f in PndMvdRiemannTrackFinderTask::Exec (this=0x976b368,
    opt=0x169e358 "")
at /data0/panda/pandaroot_jan11/trunk/mvd/MvdTracking/PndMvdRiemannTrackFin
derTask.cxx:120
#19 0x006c8c72 in TTask::ExecuteTasks (this=0x908f018, option=0x169e358 "")
at core/base/src/TTask.cxx:312
#20 0x006c8a6d in TTask::ExecuteTask (this=0x908f018, option=0x169e358 "")
at core/base/src/TTask.cxx:275
#21 0x01625ec0 in FairRunAna::Run (this=0x908ef70, Ev_start=0, Ev_end=10000)
at /data0/panda/pandaroot_jan11/trunk/base/FairRunAna.cxx:281

```

Do you have any suggestion?

Thank you,

Susanna

Subject: Re: Riemann track finder crash.

Posted by [Susanna Costanza](#) on Wed, 19 Jan 2011 09:44:08 GMT

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Sorry, I found a crash also in PndRiemannTrack with this error message:

```

*** Break *** floating point exception
=====
There was a crash (kSigFloatingException).
This is the entire stack trace of all threads:
=====
#0 0x002737a2 in _dl_sysinfo_int80 () from /lib/ld-linux.so.2
#1 0x02d3a533 in __waitpid_nocancel () from /lib/tls/libc.so.6
#2 0x02ce3869 in do_system () from /lib/tls/libc.so.6
#3 0x0024fb8d in system () from /lib/tls/libpthread.so.0
#4 0x004e9aa0 in TUnixSystem::Exec (this=0x9d5d7e8,

```

```

    shellcmd=0x10fbc958 "/data0/panda/fairsoft_jan10/tools/root/etc/gdb-backtrace.sh 4545
1>&2") at core/unix/src/TUnixSystem.cxx:1978
#5 0x004ea290 in TUnixSystem::StackTrace (this=0x9d5d7e8)
    at core/unix/src/TUnixSystem.cxx:2188
#6 0x004e7d0f in TUnixSystem::DispatchSignals (this=0x9d5d7e8,
    sig=kSigFloatingException) at core/unix/src/TUnixSystem.cxx:1106
#7 0x004e5b25 in SigHandler (sig=kSigFloatingException)
    at core/unix/src/TUnixSystem.cxx:350
#8 0x004ed29e in sighandler (sig=8) at core/unix/src/TUnixSystem.cxx:3428
#9 <signal handler called>
#10 0x0282e043 in PndRiemannTrack::calcJacRXY (this=0xbff78f80)
    at /data0/panda/pandaroot_jan11/trunk/PndTools/riemannfit/PndRiemannTrack.c xx:925
#11 0x028261b6 in PndRiemannTrack::refit (this=0xbff78f80, withErrorCalc=true)
    at /data0/panda/pandaroot_jan11/trunk/PndTools/riemannfit/PndRiemannTrack.c xx:264
#12 0x02835583 in PndRiemannTrackFinder::CreateRiemannTrack (this=0xbff79820,
    aHits=
    {<std::_Vector_base<Int_t,std::allocator<Int_t> >> = {_M_impl = {<std::allocator<Int_t>>
= {<__gnu_cxx::new_allocator<Int_t>> = {<No data fields>}, <No data fields>}, _M_start =
0x11f0ae70, _M_finish = 0x11f0ae7c, _M_end_of_storage = 0x11f0ae7c}}, <No data fields>}})
    at /data0/panda/pandaroot_jan11/trunk/PndTools/riemannfit/PndRiemannTrackFi
nder.cxx:280
#13 0x0469c9dd in PndMvdRiemannTrackFinder::FindTracks (this=0xbff79820)
    at /data0/panda/pandaroot_jan11/trunk/mvd/MvdTracking/PndMvdRiemannTrackFin
der.cxx:117

```

Thank you in advance,
Susanna

Subject: Re: Riemann track finder crash.
 Posted by [Lia Lavezzi](#) on Wed, 26 Jan 2011 17:44:29 GMT
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Hi,
 concerning the crash on PndRiemannHit::operator<, I think it is due to the fact that fS in PndRiemannHit is not initialized.

I was having the same crash and by printing the s() and aHit.s() values inside the bool operator< (const PndRiemannHit& aHit)function, i.e. the arclengths which are compared, I got a lot of lines like these:

```

S 5.06921e-307 AHIT.S() 2.80686e-317
S 5.06921e-307 AHIT.S() 2.80686e-317
S 3.35472e-304 AHIT.S() 2.80686e-317
S 3.35472e-304 AHIT.S() 5.06921e-307
S 5.06921e-307 AHIT.S() 2.80686e-317
i.e. the values are not initialized.

```

They come from sortHits() which is inside PndRiemannTrack::refit, called for the first time in PndMvdRiemannTrackFinder::GetStartTracks().
 At this stage the fS variable of the PndRiemannHit is not filled yet and this may lead to the crash.

If the sorting is not necessary in this first call, then the fS initialization should fix the problem.
What do the experts think of this?

Cheers,
Lia.

Subject: Re: Riemann track finder crash.
Posted by [Lia Lavezzi](#) on Mon, 04 Apr 2011 10:27:20 GMT
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Hi MVD experts,
as agreed during the last EVO meeting, I updated the code to the last revision and re-run the reconstruction on my files to see whether the crash happens or not.

Unfortunately I still see the crash on PndRiemannHit::operator<.

In my previous message on this thread I found a connection between this crash and an uninitialized variable (fS, in PndRiemannHit).

Even if you don't see the crash, can you please check this variable by putting a cout (std::cout << "s() " << s() << std::endl;) in the function:

bool operator< (const PndRiemannHit& aHit)
of PndRiemannHit.h to see if you see something strange too?

I see something like:

```
s() -1.174e+14  
s() -1.174e+14  
s() 1.196e-224  
s() 1.196e-224  
s() -1.174e+14  
s() -1.174e+14  
s() 1.196e-224  
s() 1.196e-224  
s() -1.174e+14  
s() -1.174e+14  
s() 1.196e-224  
s() 1.196e-224  
s() -1.174e+14  
s() -1.174e+14  
s() 1.196e-224
```

and these are clearly weird numbers.

Thank you in advance,
Lia.

Subject: Re: Riemann track finder crash.

Posted by [Tobias Stockmanns](#) on Thu, 07 Apr 2011 13:53:29 GMT

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Ciao Lia,

I have updated the trunk version of PndRiemannHit to set the default value of fS. I hope this fixes the problems you have seen.

Ciao,

Tobias

Subject: Re: Riemann track finder crash.

Posted by [Lia Lavezzi](#) on Mon, 11 Apr 2011 16:47:45 GMT

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Hi Tobias,

sorry for the late reply.

Thank you for fixing the problem! Susanna run in the weekend a lot of events without seeing any crash from the Riemann Track Finder, so I can confirm that it is ok.

Thanks!

Ciao,

Lia.
