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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 fglsA = 0x9f0ad58}, fn = {<TObject> =
  {_vptr.TObject = 0x42436c8, fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static
  fgObjectStat = false, static fglsA = 0x9f0ad58}, fNrows = 3, fRowLwb = 0, fElements =
  0xbff03954, fDataStack = {1, 0, 0, 2.1219957909652723e-314, 0}, flsOwner = true, static fglsA
  = 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> = {_vptr.TObject = 0x42436c8,
```

fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static fgObjectStat = false, static fglsA = 0x9f0ad58}, fNrows = 3, fRowLwb = 0, fElements = 0xbff039f0, fDataStack = {-0.035000000149011612, -1.7383333444595337, 3.2854499951307994, 5.9235794629144927, 0}, flsOwner = true, static fglsA = 0x0}, fweight = 179999.98903990525, fcovPlane = {<TMatrixTBase<Double\_t>> = {<TObject> = {\_vptr.TObject = 0x4243b68, fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static fgObjectStat = false, static fglsA = 0x9f0ad58}, fNrows = 4, fNcols = 4, fRowLwb = 0, fColLwb = 0, fNelems = 16, fRowIndex = 0, fTol = 2.2204460492503131e-16, flsOwner = true, static fglsA = 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, fRowIndex = 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, fRowIndex = 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/PndMvdRiemannTrackFinder.cxx:332

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

at /home/lavezzi/test\_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannTrackFinder.cxx:292

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

at /home/lavezzi/test\_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannTrackFinder.cxx:95

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

at /home/lavezzi/test\_dev/original/cfr/trunk/mvd/MvdTracking/PndMvdRiemannTrackFinderTask.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, preresult=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

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#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, retrn=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 fglsA = 0x9f0ad58}, fn = {<TObject> =
{ _vptr.TObject = 0x42436c8, fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static
fgObjectStat = false, static fglsA = 0x9f0ad58}, fNrows = 3, fRowLwb = 0, fElements =
0xbff03954, fDataStack = {1, 0, 0, 2.1219957909652723e-314, 0}, flsOwner = true, static fglsA
= 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 fglsA
= 0x9f0ad58}, fNrows = 3, fRowLwb = 0, fElements = 0xbff039f0, fDataStack =
{-0.035000000149011612, -1.7383333444595337, 3.2854499951307994,
5.9235794629144927, 0}, flsOwner = true, static fglsA = 0x0}, fweight = 179999.98903990525,
fcovPlane = {<TMatrixTBase<Double_t> = {<TObject> = { _vptr.TObject = 0x4243b68,
fUniqueID = 0, fBits = 33554432, static fgDtorOnly = 0, static fgObjectStat = false, static fglsA
= 0x9f0ad58}, fNrows = 4, fNcols = 4, fRowLwb = 0, fColLwb = 0, fNelems = 16, fRowIndex =
0, fTol = 2.2204460492503131e-16, flsOwner = true, static fglsA = 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.