

Hi,

After update by Ralf the problem with PndMCTrackAssociator is improved but not disappeared completely.

As I have written in my first post, I run the following macros  
from /macro/run/tdrct/eta\_c

```
run_sim_stt_evt.C(2000,seed)
run_digi_stt_evt.C
run_reco_stt_evt.C
```

Initially I run with 10 different seeds 101-110. In 6 out of 10 cases PndMCTrackAssociator crashed.

After update the crash appears in 2 out of 10 runs. In one case (seed=109) at the same events but with slightly different log message from MVD.

So at the beginning it was

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Error in <TDecompLU::InvertLU>: matrix is singular, 1 diag elements < tolerance of 2.2204e-16  
Error in <TDecompLU::InvertLU>: matrix is singular, 1 diag elements < tolerance of 2.2204e-16  
Found Tracks: 0 in event no. 491

-----  
Error in <TClonesArray::At>: index 16387 out of bounds (size: 944, this: 0x4c62bd0)  
mvd hit 0 35 does not exist  
mvd hit 1 36 does not exist  
mvd hit 0 35 does not exist  
mvd hit 1 36 does not exist  
\*\*\* PndRecoKalmanFit::Exec Genfit Exception: trk->addHitVector

\*\*\* Break \*\*\* segmentation violation

=====  
There was a crash.

This is the entire stack trace of all threads:

=====  
#0 0x00002b72acb4b715 in waitpid () from /lib/libc.so.6  
#1 0x00002b72acaf4721 in do\_system () from /lib/libc.so.6  
#2 0x00002b72ab0c4d39 in TUnixSystem::StackTrace ()  
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29  
#3 0x00002b72ab0c1d2a in TUnixSystem::DispatchSignals ()  
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29

```

#4 <signal handler called>
#5 0x00002b72b19a9bd8 in FairHit::GetRefIndex (this=0x0)
    at /d/panda02/dmelnich/pandaroot/pandaroot/base/FairHit.h:39
#6 0x00002b72b8bd480f in PndMCTrackAssociator::GetMvdHitPixels (
    this=0x28db740, index=35)
    at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.
cxx:142
#7 0x00002b72b8bd4e6f in PndMCTrackAssociator::Exec (this=0x28db740,
    option=0x2b72b19b4970 "")
    at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.
cxx:246
#8 0x00002b72ab04a719 in TTask::ExecuteTasks ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#9 0x00002b72ab04a16b in TTask::ExecuteTask ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#10 0x00002b72b1901701 in FairRunAna::Run (this=0x1846590, Ev_start=0,
    Ev_end=2000)
    at /d/panda02/dmelnich/pandaroot/pandaroot/base/FairRunAna.cxx:272
#11 0x00002b72b195de36 in G__FairDict_883_0_5 (result7=0x7fff88cc84d0,
    funcname=0x1843770 "", libp=0x7fff88cbdac0, hash=0)
    at /d/panda02/dmelnich/pandaroot/build64/base/FairDict.cxx:13385
#12 0x00002b72ab76559d in Cint::G__ExceptionWrapper ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#13 0x00002b72ab815f30 in G__execute_call ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#14 0x00002b72ab817c7a in G__call_cppfunc ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#15 0x00002b72ab7f0d9f in G__interpret_func ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#16 0x00002b72ab7dfe3f in G__getfunction ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#17 0x00002b72ab8cd1e3 in G__getstructmem ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#18 0x00002b72ab8c336a in G__getvariable ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#19 0x00002b72ab7b335c in G__getitem ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#20 0x00002b72ab7bdf3d in G__getexpr ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#21 0x00002b72ab8440de in G__exec_statement ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#22 0x00002b72ab79f592 in G__exec_tempfile_core ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#23 0x00002b72ab79f8bb in G__exec_tempfile ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#24 0x00002b72ab85740c in G__process_cmd ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#25 0x00002b72ab083f0c in TCint::ProcessLine ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#26 0x00002b72ab0839f3 in TCint::ProcessLineSynch ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#27 0x00002b72aafddae6 in TApplication::ExecuteFile ()

```

```

from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#28 0x00002b72aafdae7e in TApplication::ProcessLine ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#29 0x00002b72ac2dfe4d in TRint::Run ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libRint.so.5.29
#30 0x000000000040106d 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 0x00002b72b19a9bd8 in FairHit::GetRefIndex (this=0x0)
    at /d/panda02/dmelnich/pandaroot/pandaroot/base/FairHit.h:39
#6 0x00002b72b8bd480f in PndMCTrackAssociator::GetMvdHitPixels (
    this=0x28db740, index=35)
    at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.
cxx:142
#7 0x00002b72b8bd4e6f in PndMCTrackAssociator::Exec (this=0x28db740,
    option=0x2b72b19b4970 "")
    at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.
cxx:246
#8 0x00002b72ab04a719 in TTask::ExecuteTasks ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#9 0x00002b72ab04a16b in TTask::ExecuteTask ()
    from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#10 0x00002b72b1901701 in FairRunAna::Run (this=0x1846590, Ev_start=0,
    Ev_end=2000)
    at /d/panda02/dmelnich/pandaroot/pandaroot/base/FairRunAna.cxx:272
=====

```

And after update:

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```

=====
Error in <TClonesArray::At>: index 27914 out of bounds (size: 944, this: 0x47a95f0)
Found Tracks: 0 in event no. 491
-----
Error in <TClonesArray::At>: index 31855 out of bounds (size: 944, this: 0x47a95f0)
Error in <TClonesArray::At>: index 16388 out of bounds (size: 944, this: 0x47a95f0)
mvd hit 0 35 does not exist
mvd hit 1 34 does not exist
mvd hit 2 33 does not exist
mvd hit 0 35 does not exist
mvd hit 1 34 does not exist
mvd hit 2 33 does not exist
*** PndRecoKalmanFit::Exec Genfit Exception: trk->addHitVector

```

\*\*\* Break \*\*\* segmentation violation

=====  
There was a crash.

This is the entire stack trace of all threads:

=====  
#0 0x00002ade63d9d715 in waitpid () from /lib/libc.so.6  
#1 0x00002ade63d46721 in do\_system () from /lib/libc.so.6  
#2 0x00002ade62316d39 in TUnixSystem::StackTrace ()  
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29  
#3 0x00002ade62313d2a in TUnixSystem::DispatchSignals ()  
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29  
#4 <signal handler called>  
#5 0x00002ade68bfbdb8 in FairHit::GetRefIndex (this=0x0)  
at /d/panda02/dmelnich/pandaroot/pandaroot/base/FairHit.h:39  
#6 0x00002ade6fe2880f in PndMCTrackAssociator::GetMvdHitPixels (  
this=0x2d3ffe0, index=35)  
at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.  
cxx:142  
#7 0x00002ade6fe28e6f in PndMCTrackAssociator::Exec (this=0x2d3ffe0,  
option=0x2ade68c06970 "")  
at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.  
cxx:246  
#8 0x00002ade6229c719 in TTask::ExecuteTasks ()

.....  
=====

And for the seed=106 reconstruction crashed at different event

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Error in <TClonesArray::At>: index 18018 out of bounds (size: 646, this: 0x71dfae0)

Found Tracks: 4 in event no. 1166

-----  
mvd hit 0 12 does not exist

\*\*\* PndRecoKalmanFit::Exec Genfit Exception: trk->addHitVector

Error in <TDecompLU::InvertLU>: matrix is singular, 2 diag elements < tolerance of 2.2204e-16

Error in <TDecompLU::InvertLU>: matrix is singular, 2 diag elements < tolerance of 2.2204e-16

Error in <TDecompLU::InvertLU>: matrix is singular, 1 diag elements < tolerance of 2.2204e-16

Error in <TDecompLU::InvertLU>: matrix is singular, 1 diag elements < tolerance of 2.2204e-16

Error in <TDecompLU::InvertLU>: matrix is singular, 1 diag elements < tolerance of 2.2204e-16

Error in <TDecompLU::InvertLU>: matrix is singular, 2 diag elements < tolerance of 2.2204e-16

Error in <TDecompLU::InvertLU>: matrix is singular, 1 diag elements < tolerance of 2.2204e-16

\*\*\* Break \*\*\* segmentation violation

=====

There was a crash.

This is the entire stack trace of all threads:

=====

```
#0 0x00002abbad0d2715 in waitpid () from /lib/libc.so.6
#1 0x00002abbad07b721 in do_system () from /lib/libc.so.6
#2 0x00002abbab64bd39 in TUnixSystem::StackTrace ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#3 0x00002abbab648d2a in TUnixSystem::DispatchSignals ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#4 <signal handler called>
#5 0x00002abbb1f30bd8 in FairHit::GetRefIndex (this=0x0)
   at /d/panda02/dmelnich/pandaroot/pandaroot/base/FairHit.h:39
#6 0x00002abbb915d80f in PndMCTrackAssociator::GetMvdHitPixels (
   this=0x21f2f90, index=12)
   at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.
cxx:142
#7 0x00002abbb915de6f in PndMCTrackAssociator::Exec (this=0x21f2f90,
   option=0x2abbb1f3b970 "")
   at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.
cxx:246
#8 0x00002abbab5d1719 in TTask::ExecuteTasks ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#9 0x00002abbab5d116b in TTask::ExecuteTask ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#10 0x00002abbb1e88701 in FairRunAna::Run (this=0x115c590, Ev_start=0,
   Ev_end=2000)
   at /d/panda02/dmelnich/pandaroot/pandaroot/base/FairRunAna.cxx:272
#11 0x00002abbb1ee4e36 in G__FairDict_883_0_5 (result7=0x7ffea4d7270,
   funcname=0x1159770 "", libp=0x7ffea4cc860, hash=0)
   at /d/panda02/dmelnich/pandaroot/build64/base/FairDict.cxx:13385
#12 0x00002abbabcec59d in Cint::G__ExceptionWrapper ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#13 0x00002abbabd9cf30 in G__execute_call ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#14 0x00002abbabd9ec7a in G__call_cppfunc ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#15 0x00002abbabd77d9f in G__interpret_func ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#16 0x00002abbabd66e3f in G__getfunction ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#17 0x00002abbabe541e3 in G__getstructmem ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#18 0x00002abbabe4a36a in G__getvariable ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#19 0x00002abbabd3a35c in G__getitem ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#20 0x00002abbabd44f3d in G__getexpr ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#21 0x00002abbabdc0de in G__exec_statement ()
   from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#22 0x00002abbabd26592 in G__exec_tempfile_core ()
```

```

from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#23 0x00002abbabd268bb in G__exec_tempfile ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#24 0x00002abbabdde40c in G__process_cmd ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCint.so.5.29
#25 0x00002abbab60af0c in TCint::ProcessLine ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#26 0x00002abbab60a9f3 in TCint::ProcessLineSynch ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#27 0x00002abbab564ae6 in TApplication::ExecuteFile ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#28 0x00002abbab561e7e in TApplication::ProcessLine ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#29 0x00002abbac866e4d in TRint::Run ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libRint.so.5.29
#30 0x000000000040106d 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 0x00002abbb1f30bd8 in FairHit::GetRefIndex (this=0x0)
at /d/panda02/dmelnich/pandaroot/pandaroot/base/FairHit.h:39
#6 0x00002abbb915d80f in PndMCTrackAssociator::GetMvdHitPixels (
this=0x21f2f90, index=12)
at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.
cxx:142
#7 0x00002abbb915de6f in PndMCTrackAssociator::Exec (this=0x21f2f90,
option=0x2abbb1f3b970 "")
at /d/panda02/dmelnich/pandaroot/pandaroot/PndMCMatch/PndMCTrackAssociator.
cxx:246
#8 0x00002abbab5d1719 in TTask::ExecuteTasks ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#9 0x00002abbab5d116b in TTask::ExecuteTask ()
from /misc/cbmsoft/Etch64/may11/fairsoft/tools/root/lib/libCore.so.5.29
#10 0x00002abbb1e88701 in FairRunAna::Run (this=0x115c590, Ev_start=0,
Ev_end=2000)
at /d/panda02/dmelnich/pandaroot/pandaroot/base/FairRunAna.cxx:272
=====

```

Dima