Subject: Problems with EMC backward endcap geometry
Posted by StefanoSpataro on Mon, 14 Jul 2014 13:02:21 GMT
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Dear all,
it seems that there are some problems in the geoemtry of the backward endcap, which are hidden with externals apr13 but they appear with new versions of root, and also using dec13 and dec13p1.

In particular, if you run a simulation macro with dec13/dec13p1 with a root backward EC geometry, you have a crash when quitting root, when the TGeoManager is closing the objects. If you run with apr13, everything seems smooth. If you use an EMC geoemtry w/o the roto backward endcap, or with an old .dat geoemtry, the crash is not present.

You can try by yourself, running macro/emc/sim_emc.C where you have to use:

Emc->SetGeometryVersion(11);

(corresponding to file emc_module4_StraightGeo24.4.root).

You will have the following crash:

Toggle Spoiler
Cross section calculation concluded successfully
[INFO] Monte carlo Engine Initialisation with : TGeant3TGeo
[INFO] *** PndEmcGeoPar written to ROOT file version: 1
[INFO] *** PndEmcDigiPar written to ROOT file version: 1
[INFO] *** PndEmcDigiNonuniformityPar written to ROOT file version: 1
[INFO] *** FairBaseParSet written to ROOT file version: 1

*** Break *** segmentation violation
Aborted (core dumped)

==========
There was a crash.
This is the entire stack trace of all threads:
==========
#0 0x00007fa4e438bc8e in __libc_waitpid (pid=<optimized out>, stat_loc=0x7fff830eb200, options=0) at ../sysdeps/unix/sysv/linux/waitpid.c:32
#1 0x00007fa4e431129e in do_system (line=0x73725c0 "/home/spataro/dec13p1/fairbuild//etc/gdb-backtrace.sh 4479 1>&2") at ../sysdeps/posix/system.c:149
#2 0x00007fa4e5251fa7 in TUnixSystem::StackTrace() () from /home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#3 0x00007fa4e5254893 in TUnixSystem::DispatchSignals(ESignals) () from /home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#4 <signal handler called>
#5 0x00007fa4e5921f30 in vtable for TString () from /home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#6 0x00007fa4e522296c in TClass::GetActualClass(void const*) const () from

/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#7 0x00007fa4e1ee690b in TBufferFile::WriteObjectAny(void const*, TClass const*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#8 0x00007fa4e52094ab in TObjArray::Streamer(TBuffer&) () from
/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#9 0x00007fa4e1ee8814 in TBufferFile::WriteFastArray(void**, TClass const*, int, bool,
TMemberStreamer*) () from /home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#10 0x00007fa4e20621f6 in int TStreamerInfo::WriteBufferAux<char**>(TBuffer&, char**
const&, int, int, int, int) () from /home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#11 0x00007fa4e1f3c4bb in TStreamerInfoActions::GenericWriteAction(TBuffer&, void*,
TStreamerInfoActions::TConfiguration const*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#12 0x00007fa4e1ee7be5 in
TBufferFile::ApplySequence(TStreamerInfoActions::TActionSequence const&, void*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#13 0x00007fa4e1ee42a8 in TBufferFile::WriteClassBuffer(TClass const*, void*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#14 0x00007fa4e1ee8f32 in TBufferFile::WriteObjectClass(void const*, TClass const*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#15 0x00007fa4e1ee692f in TBufferFile::WriteObjectAny(void const*, TClass const*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#16 0x00007fa4db0aa149 in operator<< <TGeoManager> (buf=..., obj=0x1975950) at
/home/spataro/dec13p1/fairbuild/include/root/TBuffer.h:386
#17 0x00007fa4daff1fba in FairGeoParSet::Streamer
(this=0x19b4be0/build/buildd/gdb-7.4-2012.04/gdb/stack.c:584: internal-error:
print_frame_args: Assertion `nsym != NULL' failed.
==========

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.
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#5 0x00007fa4e5921f30 in vtable for TString () from
/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
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/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#9 0x00007fa4e1ee8814 in TBufferFile::WriteFastArray(void**, TClass const*, int, bool,
TMemberStreamer*) () from /home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#10 0x00007fa4e20621f6 in int TStreamerInfo::WriteBufferAux<char**>(TBuffer&, char**
const&, int, int, int, int) () from /home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#11 0x00007fa4e1f3c4bb in TStreamerInfoActions::GenericWriteAction(TBuffer&, void*,
TStreamerInfoActions::TConfiguration const*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#12 0x00007fa4e1ee7be5 in
TBufferFile::ApplySequence(TStreamerInfoActions::TActionSequence const&, void*) () from

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/home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#15 0x00007fa4e1ee692f in TBufferFile::WriteObjectAny(void const*, TClass const*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libRIO.so
#16 0x00007fa4db0aa149 in operator<< <TGeoManager> (buf=..., obj=0x1975950) at
/home/spataro/dec13p1/fairbuild/include/root/TBuffer.h:386
#17 0x00007fa4daff1fba in FairGeoParSet::Streamer
(this=0x19b4be0/build/buildd/gdb-7.4-2012.04/gdb/stack.c:584: internal-error:
print_frame_args: Assertion `nsym != NULL' failed.
==========

Root > Function sim_emc() busy flag cleared

*** Break *** segmentation violation

==========
There was a crash.
This is the entire stack trace of all threads:
==========
#0 0x00007fa4e438bc8e in __libc_waitpid (pid=<optimized out>, stat_loc=0x7fff8310b600,
options=0) at ../sysdeps/unix/sysv/linux/waitpid.c:32
#1 0x00007fa4e431129e in do_system (line=0x7277810
"/home/spataro/dec13p1/fairbuild//etc/gdb-backtrace.sh 4479 1>&2") at
../sysdeps/posix/system.c:149
#2 0x00007fa4e5251fa7 in TUnixSystem::StackTrace() () from
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#3 0x00007fa4e5254893 in TUnixSystem::DispatchSignals(ESignals) () from
/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#4 <signal handler called>
#5 0x00007fa4e52089d4 in TObjArray::IndexOf(TObject const*) const () from
/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#6 0x00007fa4e5208b59 in TObjArray::Remove(TObject*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#7 0x00007fa4dcbdd943 in TGeoShape::~TGeoShape() () from
/home/spataro/dec13p1/fairbuild//lib/root/libGeom.so
#8 0x00007fa4dcbdc3d9 in TGeoShapeAssembly::~TGeoShapeAssembly() () from
/home/spataro/dec13p1/fairbuild//lib/root/libGeom.so
#9 0x00007fa4dcc08549 in TGeoVolumeAssembly::~TGeoVolumeAssembly() () from
/home/spataro/dec13p1/fairbuild//lib/root/libGeom.so
#10 0x00007fa4dcc085d9 in TGeoVolumeAssembly::~TGeoVolumeAssembly() () from
/home/spataro/dec13p1/fairbuild//lib/root/libGeom.so
#11 0x00007fa4e52098d0 in TObjArray::Delete(char const*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#12 0x00007fa4dcba2094 in TGeoManager::~TGeoManager() () from
/home/spataro/dec13p1/fairbuild//lib/root/libGeom.so
#13 0x00007fa4dcba2339 in TGeoManager::~TGeoManager() () from

/home/spataro/dec13p1/fairbuild//lib/root/libGeom.so
#14 0x00007fa4e5206735 in TList::Delete(char const*) () from
/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#15 0x00007fa4e51be24d in TROOT::EndOfProcessCleanups() () from
/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#16 0x00007fa4e524df46 in TUnixSystem::Exit(int, bool) () from
/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#17 0x00007fa4e4dd1570 in TRint::Run(bool) () from
/home/spataro/dec13p1/fairbuild//lib/root/libRint.so.5.34
#18 0x0000000000400f6c in main ()
==========

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/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
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/home/spataro/dec13p1/fairbuild//lib/root/libCore.so.5.34
#7 0x00007fa4dcbdd943 in TGeoShape::~TGeoShape() () from
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#8 0x00007fa4dcbdc3d9 in TGeoShapeAssembly::~TGeoShapeAssembly() () from
/home/spataro/dec13p1/fairbuild//lib/root/libGeom.so
#9 0x00007fa4dcc08549 in TGeoVolumeAssembly::~TGeoVolumeAssembly() () from
/home/spataro/dec13p1/fairbuild//lib/root/libGeom.so
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/home/spataro/dec13p1/fairbuild//lib/root/libRint.so.5.34
#18 0x0000000000400f6c in main ()
==========

In order to check what is going wrong, I have tried to check the macro to create the root file, macro/emc/dedicated/createRootGeoFileBwEnd_Str24.4.C, modifying the path to the media

file, I have the following error:

Info in <TGeoManager::CheckGeometry>: Fixing runtime shapes...
Info in <TGeoManager::CheckGeometry>: ...Nothing to fix
Info in <TGeoManager::CloseGeometry>: Counting nodes...
Info in <TGeoManager::Voxelize>: Voxelizing...
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume Emc4
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume QuarterNewVol
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol1
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol2
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol3
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol4
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol5
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol6
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol7
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol8
Error in <TGeoVoxelFinder::SortAll>: Wrong bounding box for volume SubunitVol9
Info in <TGeoManager::CloseGeometry>: Building cache...
Info in <TGeoManager::CountLevels>: max level = 4, max placements = 14
Info in <TGeoManager::CloseGeometry>: 765 nodes/ 20 volume UID's in FAIR geometry
Info in <TGeoManager::CloseGeometry>: ----------modeler ready----------
Info in <TGeoManager::Export>: Exporting FAIRGeom FAIR geometry as root file.
Optimizations streamed.
Info in <TCanvas::MakeDefCanvas>: created default TCanvas with name c1
Info in <TGeoManager::SetVisLevel>: Automatic visible depth disabled

This tells me that we have some serious problem, since the same error I get usign apr13 externals.

Could somebody please take a look and fix it? If not, with the new incoming external packages, I will have to comment out the detector from the default reconstruction.

Thanks in advance.