
Subject: [FIXED] problem with GEANT4 materials
Posted by [Dmitry Khaneft](#) on Wed, 24 Feb 2010 14:39:35 GMT
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Dear all,

I tried to implement some dead material as a part of the EMC backward encap.

I created some boxes made of copper but it cause an error during a simulation. If I replace copper with aluminium everything works!

Error log:

...

```
===== EMC:: ConstructROOTGeometry() m4 ===
=====
File name Bw =
/u/dkhanef/fairsoft/feb10/geometry/emc_module4_StraightGeo24.4_Al2_MVD.root
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...
Info in <TGeoManager::CloseGeometry>: Building cache...
Info in <TGeoNavigator::BuildCache>: --- Maximum geometry depth set to 100
Info in <TGeoManager::CloseGeometry>: 768 nodes/ 23 volume UID's in FAIR geometry
Info in <TGeoManager::CloseGeometry>: -----modeler ready-----
Info in <TG4RootNavMgr::SetNavigator>: TG4RootNavigator created and registered to
G4TransportationManager
Running TVirtualMCApplication::ConstructGeometry
*****
Geant4 version Name: geant4-09-02-patch-02 (28-August-2009)
      Copyright : Geant4 Collaboration
      Reference : NIM A 506 (2003), 250-303
      WWW : http://cern.ch/geant4
*****

Info in <TG4RootNavMgr::Initialize>: Creating G4 hierarchy ...
Info in <TGeoManager::ConvertReflections>: Converting reflections in: FAIRGeom - FAIR
geometry ...
Info in <TGeoManager::ConvertReflections>: Done
==> GEANT4 materials created and mapped to TGeo ones...
```

```
*** Break *** segmentation violation
```

...

```
=====
```

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 0xb64af89c in TGeoMedium::GetMaterial (this=0x0) at include/TGeoMedium.h:54
#11 0xaae5cad1 in TG4RootDetectorConstruction::CreateG4LogicalVolume (this=0xa2009e0,
vol=0x8e9f6b8)
    at montecarlo/g4root/src/TG4RootDetectorConstruction.cxx:284
#12 0xaae5cd9f in TG4RootDetectorConstruction::CreateG4PhysicalVolume (this=0xa2009e0,
node=0x8e9f678)
    at montecarlo/g4root/src/TG4RootDetectorConstruction.cxx:310
#13 0xaae5d2d1 in TG4RootDetectorConstruction::CreateG4PhysicalVolumes
(this=0xa2009e0) at montecarlo/g4root/src/TG4RootDetectorConstruction.cxx:225
#14 0xaae5d413 in TG4RootDetectorConstruction::Construct (this=0xa2009e0) at
montecarlo/g4root/src/TG4RootDetectorConstruction.cxx:191
#15 0xaae5b97e in TG4RootDetectorConstruction::Initialize (this=0xa2009e0,
sdinit=0xa2140b8) at montecarlo/g4root/src/TG4RootDetectorConstruction.cxx:173
#16 0xaae68293 in TG4RootNavMgr::Initialize (this=0x8cc7850, sdinit=0xa2140b8) at
montecarlo/g4root/src/TG4RootNavMgr.cxx:131
#17 0xaadd3f13 in TG4RunManager::ConfigureRunManager (this=0x8d4d140) at
run/src/TG4RunManager.cxx:233
#18 0xaadd4945 in TG4RunManager (this=0x8d4d140, runConfiguration=0x8c8d2c0) at
run/src/TG4RunManager.cxx:153
#19 0xaaddc57f in TGeant4 (this=0x8cf4f20, name=0x890a50c "TGeant4", title=0x8c8306c
"The Geant4 Monte Carlo", configuration=0x8c8d2c0)
    at run/src/TGeant4.cxx:148
=====
```

Any idea what is wrong with a copper?

Best regards,
Dmitry

Subject: Re: GEANT4 materials
Posted by [Stefano Spataro](#) on Wed, 24 Feb 2010 14:44:38 GMT
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Hi,
in your geometry/media_pnd.geo please modify the copper definition with the following text:

```
copper      1 63.54 29. 8.96
            0 1 20. .001
            0
```

(one "0" becomes "1", for the magneti field) and let me know if it works now.

Subject: Re: GEANT4 materials
Posted by [Dmitry Khaneft](#) on Wed, 24 Feb 2010 14:49:41 GMT
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Stefano Spataro wrote on Wed, 24 February 2010 15:44Hi,
in your geometry/media_pnd.geo please modify the copper definition with the following text:

```
copper      1 63.54 29. 8.96
            0 1 20. .001
            0
```

(one "0" becomes "1", for the magneti field) and let me know if it works now.

It doesn't help.

P.S.: I use feb10 release of pandaroot.

Subject: Re: GEANT4 materials
Posted by [asanchez](#) on Wed, 24 Feb 2010 15:37:44 GMT
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Dear Dimitry,
you should first,
modify your data in media_pnd.geo
copper 1 63.54 29. 8.96
 1 1 20. .001
 0

and second, if you are defining the geometry using
root classes, in your detector class(PndEmc.cxx)
at ConstructGeometry()
after

```
FairGeoLoader*geoLoad = FairGeoLoader::Instance();
FairGeoInterface *geoFace = geoLoad->getGeoInterface();
FairGeoMedia *Media = geoFace->getMedia();
FairGeoBuilder *geobuild=geoLoad->getGeoBuilder();
```

you should add the following lines

```
FairGeoMedium *Cu = Media->getMedium("copper");
Int_t nmedCu=geobuild->createMedium(Cu);
```

i hope it works,
Alicia.

Subject: Re: problem with GEANT4 materials
Posted by [Dmitry Khaneft](#) on Wed, 24 Feb 2010 15:42:06 GMT
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Dear Stefano,

the problem is solved!

Sorry for disturbing it was a stupid mistake. While trying to use others materials I understood that I didn't define copper in my macro.

Quote: FairGeoMedium *Cu = Media->getMedium("copper");
Int_t nmedCu=geobuild->createMedium(Cu);
it is exactly what I forgot to do.

Subject: Re: problem with GEANT4 materials
Posted by [Stefano Spataro](#) on Wed, 24 Feb 2010 16:04:49 GMT
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Good to know
Could you please modify the title of your first message, writing something like:

[FIXED] problem with GEANT4 materials

so that we know it is fixed
Many thanks
