Subject: TGeoManager and TGeoVolume
Posted by Ralf Kliemt on Mon, 25 Feb 2008 15:21:09 GMT
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Hi all,

I have a root geometry file which contains a new design of the MVD. However, it is inside a TGeoManager object in the file. My main problem is that there can be only one TGeoManager in the simulation. This forbids me to load the stored manager from the file and subsequently adding the volumes to the global gGeoManager.
I tried to do a workaround by storing the Volumes in a new root file without the manager:
Toggle Spoiler

```
{
  gROOT->LoadMacro("$VMCWORKDIR/gconfig/basiclibs.C");
  basiclibs();

  gSystem->Load("libGeoBase");
  gSystem->Load("libParBase");
  gSystem->Load("libBase");
  gSystem->Load("libField");
  gSystem->Load("libGen");
  gSystem->Load("libPassive");
  gSystem->Load("libMCStack");
  gSystem->Load("libMvd");
  gSystem->Load("libGeom.so");

  TFile* file = new TFile("../../../geometry/MVD_20a.root");
  TGeoManager *geoMan = (TGeoManager*) file->Get("CADtoROOT");
  TGeoVolume* topvol = geoMan->GetMasterVolume();
  //topvol->Write();
  topvol->Export("../../../geometry/MVD_20a_vol.root","TOP","recreate ");

}
```

Loading this to the simulation does not work and it seems that only the top volume is stored, but not the subsequent ones.
Does have someone (Mohammed? Tobias(currently N/A)?) have experience with this?
I suppose there shall be some intelligent recursive loop over all entries in the file. Is there maybe a possibility to load the volumes directly and bypassing this stored geomanager?

Kind greetings from Dresden, Ralf.

Subject: Re: TGeoManager and TGeoVolume
Posted by Mohammad Al-Turany on Mon, 25 Feb 2008 20:29:44 GMT
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Hi,

Reading a TGeoManager from file is on my long todo list since last year! it is not implimented yet but in principle it is easy to do! I hope I will do this in the next few weeks!

Mohammad

Subject: Re: TGeoManager and TGeoVolume
Posted by Aleksandra Wronska on Tue, 26 Feb 2008 07:33:36 GMT
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Hi Ralf,

in macro/dch/createRootGeoFile.C you can find how we do it for the drift chambers (and it works). Simply

```
TGeoVolume *top = gGeoMan->MakeBox("top",gGeoMan->GetMedium("air"),350,100,800);
  gGeoMan->SetTopVolume(top);
//..
//filling the top volume
//...
TFile* fi = new TFile(outfile,"RECREATE");
top->Write();
  fi->Close();
```

does the job, including top's content (i.e. recursively).

I hope this helps,
ola

Subject: Re: TGeoManager and TGeoVolume
Posted by Ralf Kliemt on Tue, 26 Feb 2008 10:17:12 GMT
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Hello,

It seems that the geometry volumes are stored but not the medium information. Examining the rootfile contents I see:

The first one is the geomanagter and the second one just the stored top volume (which indeed seems to dive into the subvolumes) when exporting.
Do I need the additional Material, Media and Local transformations directories? Because when I run the simulation with this Mvd_20a_vol.root file it crashes somewhere inside Geant4.
Simulation output:
Toggle Spoiler
root [0]
Processing materialsim.C...

PSaid instance created... access via gSaid->f()

- RTDB container factory CbmBaseContFact
- RTDB container factory PndFieldContFact
- RTDB container factory PndPassiveContFact

- RTDB container factory PndTpcContFact
- RTDB container factory PndMvdContFact
PndStringVector for: ../data/mvdTestGeo.root
0: ..
1: data
2: mvdTestGeo.root
-I- CbmRun::SetMaterials() Media file used:
/home/ralfk/Pandaroot/pandaroot/geometry/media_pnd.geo
- I - PndMvdDetector: fListOfSensitives contains:
Disk-Sensor
Barrel-Sensor
StripSensor
SensorActiveArea

============== CbmRunSim: Initialising simulation run ==============
Info in <TGeoManager::TGeoManager>: Geometry CBMGeom, CBM geometry created
-I- CbmGeoMedia Read media
CbmMCApplication::SetRadiationLengthReg(Bool_t RadLen)0x85454d8
Loading Geant4 granular libraries ...
Loading VGM libraries ...
Loading libraries ... finished
Info in <TGeoManager::SetTopVolume>: Top volume is cave. Master volume is cave
Material silicon is not defined
Create Medium silicon
Material carbon is not defined
Create Medium carbon
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>: 3977 nodes/ 71 volume UID's in CBM geometry
Info in <TGeoManager::CloseGeometry>: ----------modeler ready----------
Info in <TG4RootNavMgr::SetNavigator>: TG4RootNavigator created and registered to
G4TransportationManager
Running TVirtualMCApplication::ConstructGeometry
****
Geant4 version Name: geant4-09-00 (29-June-2007)
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: CBMGeom - CBM
geometry ...
Info in <TGeoManager::ConvertReflections>: Done
===> GEANT4 materials created and mapped to TGeo ones...
===> GEANT4 physical volumes created and mapped to TGeo hierarchy...
INFO: TG4RootDetectorConstruction::Construct() finished
TG4PostDetConstruction::Initialize

```
G4 Stat: instantiated 71 logical volumes
                 195 physical volumes
Info in <TG4RootNavMgr::ConnectToG4>: ROOT detector construction class connected to
G4RunManager
Adding HadronPhysicsList QGSP_BERT

<<< Geant4 Physics List engine packaging library: PACK 5.3
<<< Geant4 Physics List simulation engine: QGSP_BERT 3.3

Adding SpecialPhysicsList
Debug mode is switched on.
Visualization Manager instantiating...
Visualization Manager initialising...
Registering graphics systems...

You have successfully registered the following graphics systems.
Current available graphics systems are:
  ASCIITree (ATree)
  DAWNFILE (DAWNFILE)
  G4HepRepFile (HepRepFile)
  G4HepRep (HepRepXML)
  RayTracer (RayTracer)
  VRML1FILE (VRML1FILE)
  VRML2FILE (VRML2FILE)
  OpenGLImmediateX (OGLIX)
  OpenGLStoredX (OGLSX)
  OpenGLImmediateXm (OGLIXm)
  OpenGLStoredXm (OGLSXm)

Registering model factories...

You have successfully registered the following model factories.
Registered model factories:
  drawByCharge
  drawByParticleID

Registered filter factories:
  None

Geant4 has been created.
 -I g4Config() using g4conf  macro: /home/ralfk/Pandaroot/pandaroot/gconfig/g4config.in
Physics cuts with script
 /home/ralfk/Pandaroot/pandaroot/gconfig/SetCuts.C
### Adding Neutron tracking cut for neutron
###  cut value is 10 microseconds
### Hadron physics constructed.
### Processes mapped to VMC controls ok.
### Special Cuts constructed.
### Step limiter physics constructed.
### User particles physics constructed.
### Processes mapped to VMC codes ok.
 -I- CbmMCApplication ->  simulation RunID:  1708913840
```

```
********************************************
   GEANT4 Geometry statistics:
          71 logical volumes
         195 physical volumes
           6 materials
           6 user limits
          71 sensitive detectors
********************************************

 -I- CbmMCApplication:: Monte carlo Engine Initialisation  with TGeant4
RuntimeDb: write container CbmBaseParSet
***  CbmBaseParSet written to ROOT file   version: 3
RuntimeDb: write container PndGeoPassivePar
***  PndGeoPassivePar written to ROOT file   version: 3
 ------------------------------------------------------------------------ --------
--------------  actual containers in runtime database  -------------------------
CbmBaseParSet                          Test class for parameter io
PndGeoPassivePar                        Passive Geometry Parameters
--------------  runs, versions  ------------------------------------------------
run id
  container                            1st-inp    2nd-inp    output
run: 1708913840
  CbmBaseParSet                         1708913840        -1         3
  PndGeoPassivePar                       1708913840        -1         3
--------------  input/output  --------------------------------------------------
Toggle Spoiler
first input: none
second input: none
output:
OBJ: CbmParRootFile     ../data/mvdmaterial_partest.root         : 0 at: 0xa186408
Root file I/O ../data/mvdmaterial_partest.root is open
detector I/Os:  CbmGenericParIo

phot:  Total cross sections from Sandia parametrisation.
      Sampling according PhotoElectric model

compt:  Total cross sections has a good parametrisation from 10 KeV to (100/Z) GeV
      Sampling according Klein-Nishina model
      tables are built for  gamma
      Lambda tables from 100 eV  to 100 GeV in 90 bins.

conv:  Total cross sections has a good parametrisation from 1.5 MeV to 100 GeV for all Z;
      sampling secondary e+e- according Bethe-Heitler model
      tables are built for  gamma
      Lambda tables from 1.022 MeV to 100 GeV in 100 bins.

msc:  Model variant of multiple scattering for e-
      Lambda tables from 100 eV  to 100 TeV in 120 bins.
      LateralDisplacementFlag=  1   Skin= 0
      Boundary/stepping algorithm is active with RangeFactor= 0.02  Step limit type 1
```

eIoni: tables are built for e-
    dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
    Lambda tables from threshold to 100 TeV in 120 bins.
    Delta cross sections and sampling from MollerBhabha model
    Good description from 1 KeV to 100 GeV.
    Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1

eBrem: tables are built for e-
    dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
    Lambda tables from threshold to 100 TeV in 120 bins.
    Total cross sections and sampling from StandBrem model (based on the EEDL data library)
    Good description from 1 KeV to 100 GeV, log scale extrapolation above 100 GeV. LPM flag 1

eIoni: tables are built for e+
    dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
    Lambda tables from threshold to 100 TeV in 120 bins.
    Delta cross sections and sampling from MollerBhabha model
    Good description from 1 KeV to 100 GeV.
    Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1

eBrem: tables are built for e+
    dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
    Lambda tables from threshold to 100 TeV in 120 bins.
    Total cross sections and sampling from StandBrem model (based on the EEDL data library)
    Good description from 1 KeV to 100 GeV, log scale extrapolation above 100 GeV. LPM flag 1

annihil: Sampling according eplus2gg model
    tables are built for e+
    Lambda tables from 100 eV to 100 TeV in 120 bins.

msc: Model variant of multiple scattering for proton
    Lambda tables from 100 eV to 100 TeV in 120 bins.
    LateralDisplacementFlag= 1 Skin= 0
    Boundary/stepping algorithm is active with RangeFactor= 0.2 Step limit type 0

hIoni: tables are built for proton
    dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
    Lambda tables from threshold to 100 TeV in 120 bins.
    Scaling relation is used from proton dE/dx and range.
    Delta cross sections and sampling from BetheBloch model for scaled energy > 2 MeV
    Parametrisation from Bragg for protons below.
    Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1

msc: Model variant of multiple scattering for GenericIon
    LateralDisplacementFlag= 0 Skin= 0
    Boundary/stepping algorithm is active with RangeFactor= 0.2 Step limit type 1

ionIoni: tables are built for GenericIon

dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Scaling relation is used from proton dE/dx and range.
Delta cross sections and sampling from BetheBloch model for scaled energy > 2 MeV
Parametrisation from BraggIon for protons below. NuclearStopping 1

Stopping Power data for 8 ion/material pairs are used.
Step function: finalRange(mm)= 0.1, dRoverRange= 0.1, integral: 1

hIoni: tables are built for anti_proton
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Scaling relation is used from proton dE/dx and range.
Delta cross sections and sampling from BetheBloch model for scaled energy > 2 MeV
Parametrisation from Bragg for protons below.
Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1

msc: Model variant of multiple scattering for mu+
Lambda tables from 100 eV to 100 TeV in 120 bins.
LateralDisplacementFlag= 1   Skin= 0
Boundary/stepping algorithm is active with RangeFactor= 0.2 Step limit type 0

muIoni: tables are built for mu+
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Bether-Bloch model for E > 0.2 MeV, parametrisation of Bragg peak below,
radiative corrections for E > 1 GeV
Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1

muBrems: tables are built for mu+
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Parametrised model

muPairProd: tables are built for mu+
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Parametrised model

muIoni: tables are built for mu-
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Bether-Bloch model for E > 0.2 MeV, parametrisation of Bragg peak below,
radiative corrections for E > 1 GeV
Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1

muBrems: tables are built for mu-
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Parametrised model

muPairProd: tables are built for mu-

dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Parametrised model

G4UHadronElasticProcess for neutron PDGcode= 2112 Elow(MeV)= 19 Elowest(eV)= 0

hIoni: tables are built for pi+
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Scaling relation is used from proton dE/dx and range.
Delta cross sections and sampling from BetheBloch model for scaled energy > 0.297504 MeV
Parametrisation from Bragg for protons below.
Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1

msc: Model variant of multiple scattering for pi-
Lambda tables from 100 eV to 100 TeV in 120 bins.
LateralDisplacementFlag= 1   Skin= 0
Boundary/stepping algorithm is active with RangeFactor= 0.2 Step limit type 0

hIoni: tables are built for pi-
dE/dx and range tables from 100 eV to 100 TeV in 120 bins.
Lambda tables from threshold to 100 TeV in 120 bins.
Scaling relation is used from proton dE/dx and range.
Delta cross sections and sampling from BetheBloch model for scaled energy > 0.297504 MeV
Parametrisation from Bragg for protons below.
Step function: finalRange(mm)= 1, dRoverRange= 0.2, integral: 1

========= Table of registered couples ==============================

Index : 0   used in the geometry : Yes   recalculation needed : No
 Material : air
 Range cuts   : gamma 1 mm   e- 1 mm   e+ 1 mm
 Energy thresholds : gamma 990 eV   e- 990 eV   e+ 990 eV
 Region(s) which use this couple :
    DefaultRegionForTheWorld

Index : 1   used in the geometry : Yes   recalculation needed : No
 Material : vacuum
 Range cuts   : gamma 1 mm   e- 1 mm   e+ 1 mm
 Energy thresholds : gamma 990 eV   e- 990 eV   e+ 990 eV
 Region(s) which use this couple :
    DefaultRegionForTheWorld

Index : 2   used in the geometry : Yes   recalculation needed : No
 Material : steel
 Range cuts   : gamma 1 mm   e- 1 mm   e+ 1 mm
 Energy thresholds : gamma 20.8323 keV   e- 1.31192 MeV   e+ 1.23361 MeV
 Region(s) which use this couple :
    DefaultRegionForTheWorld

```
Index : 3     used in the geometry : Yes     recalculation needed : No
 Material : Al+Be
 Range cuts        :  gamma 1 mm     e- 1 mm     e+ 1 mm
 Energy thresholds :  gamma 4.45676 keV    e- 496.074 keV    e+ 478.087 keV
 Region(s) which use this couple :
    DefaultRegionForTheWorld

Index : 4     used in the geometry : Yes     recalculation needed : No
 Material : silicon
 Range cuts        :  gamma 1 mm     e- 1 mm     e+ 1 mm
 Energy thresholds :  gamma 6.88731 keV    e- 540.718 keV    e+ 521.113 keV
 Region(s) which use this couple :
    DefaultRegionForTheWorld

Index : 5     used in the geometry : Yes     recalculation needed : No
 Material : carbon
 Range cuts        :  gamma 1 mm     e- 1 mm     e+ 1 mm
 Energy thresholds :  gamma 3.29462 keV    e- 568.011 keV    e+ 554.196 keV
 Region(s) which use this couple :
    DefaultRegionForTheWorld

========================================================================

### Run 0 start.
-I CbmPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)
>>> Event 0

>>> End of Event 0
-I CbmPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)
>>> Event 1

>>> End of Event 1
-I CbmPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)
>>> Event 2

>>> End of Event 2
-I CbmPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)
>>> Event 3

>>> End of Event 3
-I CbmPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)
>>> Event 4

>>> End of Event 4
-I CbmPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)
>>> Event 5

>>> End of Event 5
-I CbmPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)
>>> Event 6

>>> End of Event 6
```

-I CbmPrimaryGenerator: 1 primary tracks from vertex (0, 0, 0)
>>> Event 7

Program received signal SIGSEGV, Segmentation fault.

where the gdb output gives (I marked suspicious things):
Toggle Spoiler
Program received signal SIGSEGV, Segmentation fault.
[Switching to Thread -1225921760 (LWP 15821)]
0xb6af4281 in TGeoVoxelFinder::GetValidExtra (this=0x8865590, array1=0x885a5c4 "A",
array2=0x885a5e4 "\001", list=0x88658e8, ncheck=@0xbfe7b3d4)
    at geom/src/TGeoVoxelFinder.cxx:590
590   byte = (~fBits1[loc]) & array1[loc] & array2[loc] & (1<<bit);
(gdb) bt
#0 0xb6af4281 in TGeoVoxelFinder::GetValidExtra (this=0x8865590, array1=0x885a5c4 "A",
array2=0x885a5e4 "\001", list=0x88658e8, ncheck=@0xbfe7b3d4)
    at geom/src/TGeoVoxelFinder.cxx:590
#1 0xb6af8260 in TGeoVoxelFinder::GetNextCandidates (this=0x8865590, point=0xbfe7b408,
ncheck=@0xbfe7b3d4) at geom/src/TGeoVoxelFinder.cxx:1109
#2 0xb6af5bd8 in TGeoVoxelFinder::GetNextVoxel (this=0x8865590, point=0xbfe7b408,
ncheck=@0xbfe7b3d4) at geom/src/TGeoVoxelFinder.cxx:1426
#3 0xb6ac2e5e in TGeoShapeAssembly::DistFromOutside (this=0x885b1e8,
point=0xbfe7b4c0, dir=0xbfe7b4a8, iact=3, step=1516.9575844741444, safe=0x0)
    at geom/src/TGeoShapeAssembly.cxx:228
#4 0xb6ac2de6 in TGeoShapeAssembly::DistFromOutside (this=0x885ca98,
point=0xbfe7b590, dir=0xbfe7b578, iact=3, step=1516.9575844741444, safe=0x0)
    at geom/src/TGeoShapeAssembly.cxx:233
#5 0xb6ac2de6 in TGeoShapeAssembly::DistFromOutside (this=0x879ce18,
point=0xbfe7b660, dir=0xbfe7b648, iact=3, step=1516.9575844741444, safe=0x0)
    at geom/src/TGeoShapeAssembly.cxx:233
#6 0xb6ac2de6 in TGeoShapeAssembly::DistFromOutside (this=0x88750b0,
point=0xbfe7b720, dir=0xbfe7b708, iact=3, step=1516.9575844741444, safe=0x0)
    at geom/src/TGeoShapeAssembly.cxx:233
#7 0xb6a9175b in TGeoNavigator::FindNextDaughterBoundary (this=0x8538ec8,
point=0xbfe7b850, dir=0xbfe7b838, idaughter=@0xbfe7b834, compmatrix=true)
    at geom/src/TGeoNavigator.cxx:833
#8 0xb6a969a9 in TGeoNavigator::FindNextBoundary (this=0x8538ec8,
stepmax=99999.999999999898, path=0xafcc0be8 "", frombdr=true)
    at geom/src/TGeoNavigator.cxx:590
#9 0xb6a748dd in TGeoManager::FindNextBoundary (this=0x8520140,
stepmax=-99999.999999999898, path=0xafcc0be8 "", frombdr=true)
    at geom/src/TGeoManager.cxx:2305
#10 0xafcb8bf0 in TG4RootNavigator::ComputeStep (this=0x9b90538,
pGlobalPoint=@0xbfe7bf50, pDirection=@0xbfe7ba78,
    pCurrentProposedStepLength=999999.99999999988, pNewSafety=@0xbfe7bf00) at
g4root/src/TG4RootNavigator.cxx:143
#11 0xb24adbe6 in G4PropagatorInField::IntersectChord (this=0x9b973a0,
StartPointA=@0xbfe7bf50, EndPointB=@0xbfe7bf38, NewSafety=@0xbfe7bf00,
    LinearStepLength=@0xbfe7be78, IntersectionPoint=@0xbfe7be80) at
src/G4PropagatorInField.cc:1140
#12 0xb24b1716 in G4PropagatorInField::ComputeStep (this=0x9b973a0,

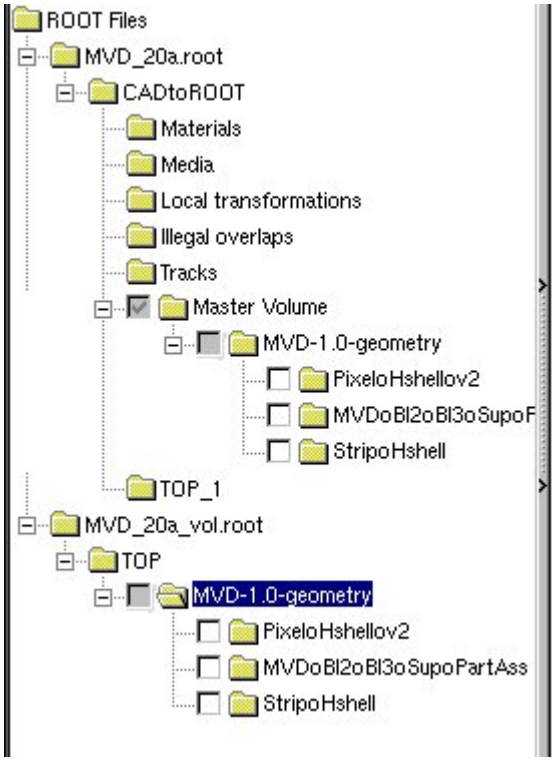
pFieldTrack=@0xbfe7c0b8, CurrentProposedStepLength=1000000,
currentSafety=@0xbfe7c358,
    pPhysVol=0x9ba8458) at src/G4PropagatorInField.cc:274
#13 0xb2002174 in G4Transportation::AlongStepGetPhysicalInteractionLength
(this=0x9d4d968, track=@0xa524478, currentMinimumStep=1.7976931348623157e+308,
    currentSafety=@0xbfe7c358, selection=0x9b97d14) at src/G4Transportation.cc:302
---Type <return> to continue, or q <return> to quit---
#14 0xb0976ac3 in G4VProcess::AlongStepGPIL (this=0x9d4d968, track=@0xa524478,
previousStepSize=1.2641933897456639,
    currentMinimumStep=1.7976931348623157e+308, proposedSafety=@0xbfe7c358,
selection=0x9b97d14)
    at /data_hilbert/Software/fairroot/cbmsoft_231107/transport/geant4/source/p
rocesses/management/include/G4VProcess.hh:412
#15 0xb09750b1 in G4SteppingManager::DefinePhysicalStepLength (this=0x9b97c10) at
src/G4SteppingManager2.cc:223
#16 0xb0979a76 in G4SteppingManager::Stepping (this=0x9b97c10) at
src/G4SteppingManager.cc:180
#17 0xb0983f1c in G4TrackingManager::ProcessOneTrack (this=0x9b97ba8,
apValueG4Track=0xa524478) at src/G4TrackingManager.cc:126
#18 0xb088b01d in G4EventManager::DoProcessing (this=0x9b97b60, anEvent=0x9ba47f0) at
src/G4EventManager.cc:185
#19 0xb088b7ba in G4EventManager::ProcessOneEvent (this=0x9b97b60,
anEvent=0x9ba47f0) at src/G4EventManager.cc:335
#20 0xb082b45b in G4RunManager::DoEventLoop (this=0x9b97aa0, n_event=100,
macroFile=0x0, n_select=-1) at src/G4RunManager.cc:234
#21 0xb0829ae5 in G4RunManager::BeamOn (this=0x9b97aa0, n_event=100, macroFile=0x0,
n_select=-1) at src/G4RunManager.cc:139
#22 0xafc22dd7 in TG4RunManager::ProcessRun (this=0x8656ba0, nofEvents=100) at
run/src/TG4RunManager.cxx:380
#23 0xafc278c7 in TGeant4::ProcessRun (this=0x8651570, nofEvents=100) at
run/src/TGeant4.cxx:1132
#24 0xb30629ef in CbmMCApplication::RunMC (this=0x85431c8, nofEvents=100) at
/home/ralfk/Pandaroot/pandaroot/base/CbmMCApplication.cxx:182
#25 0xb3074685 in CbmRunSim::Run (this=0x84e35b8, NStart=100, NStop=0) at
/home/ralfk/Pandaroot/pandaroot/base/CbmRunSim.cxx:148
#26 0xb30b2ffb in G__CbmDict_530_0_5 (result7=0xbfe8cb5c, funcname=0x84e1e88 "\001",
libp=0xbfe867b8, hash=0)
    at /home/ralfk/Pandaroot/build/base/CbmDict.cxx:9338
#27 0xb723a55b in Cint::G__ExceptionWrapper (funcp=0xb30b2e9a
<G__CbmDict_530_0_5>, result7=0xbfe8cb5c, funcname=0x84e1e88 "\001",
libp=0xbfe867b8, hash=0)
    at cint/src/Api.cxx:364
#28 0xb73498a0 in G__call_cppfunc (result7=0xbfe8cb5c, libp=0xbfe867b8, ifunc=0x84e1e88,
ifn=0) at cint/src/v6_newlink.cxx:512
#29 0xb7310f65 in G__interpret_func (result7=0xbfe8cb5c, funcname=0xbfe8c55c "Run",
libp=0xbfe867b8, hash=309, p_ifunc=0x84e1e88, funcmatch=1,
    memfunc_flag=1) at cint/src/v6_ifunc.cxx:5118
#30 0xb7300554 in G__getfunction (item=0xbfe90fc6 "Run(nEvents)", known3=0xbfe8f58c,
memfunc_flag=1) at cint/src/v6_func.cxx:2511
#31 0xb73d5090 in G__getstructmem (store_var_type=112, varname=0xbfe8ee78 "",
membername=0xbfe90fc6 "Run(nEvents)", tagname=0xbfe8ec78 "fRun",
    known2=0xbfe8f58c, varglobal=0xb747b3a0, objptr=2) at cint/src/v6_var.cxx:6562

#32 0xb73c7ffd in G__getvariable (item=0xbfe90fc0 "fRun->Run(nEvents)",
known2=0xbfe8f58c, varglobal=0xb747b3a0, varlocal=0x0) at cint/src/v6_var.cxx:5206
#33 0xb72ce2b2 in G__getitem (item=0xbfe90fc0 "fRun->Run(nEvents)") at
cint/src/v6_expr.cxx:1884
---Type <return> to continue, or q <return> to quit---
#34 0xb72e1453 in G__getexpr (expression=0xbfe915fc "fRun->Run(nEvents)") at
cint/src/v6_expr.cxx:1470
#35 0xb735bd31 in G__exec_function (statement=0xbfe915fc "fRun->Run(nEvents)",
pc=0xbfe91c98, piout=0xbfe91c94, plargestep=0xbfe91c8c, presult=0xbfe91c48)
    at cint/src/v6_parse.cxx:598
#36 0xb7362d6f in G__exec_statement (mparen=0xbfe98b48) at cint/src/v6_parse.cxx:6923
#37 0xb72b7000 in G__exec_tempfile_core (file=0xbfe9ac3c
"/home/ralfk/Pandaroot/pandaroot/macro/mvd/Ralf/./materialsim.C", fp=0x0)
    at cint/src/v6_debug.cxx:251
#38 0xb72b733d in G__exec_tempfile (file=0xbfe9ac3c
"/home/ralfk/Pandaroot/pandaroot/macro/mvd/Ralf/./materialsim.C") at
cint/src/v6_debug.cxx:798
#39 0xb737515a in G__process_cmd (line=0xb7efe750 "int.RadLen_]", prompt=0x80cc994 "",
more=0x80cc98c, err=0xbfe9baf8, rslt=0xbfe9bac8)
    at cint/src/v6_pause.cxx:3070
#40 0xb79c70f9 in TCint::ProcessLine (this=0x80cc970, line=0xb7efe750 "int.RadLen_]",
error=0xbfe9e304) at meta/src/TCint.cxx:289
#41 0xb79c15bc in TCint::ProcessLineSynch (this=0x80cc970, line=0xb7efe750
"int.RadLen_]", error=0xbfe9e304) at meta/src/TCint.cxx:354
#42 0xb7909532 in TApplication::ExecuteFile (file=0xbfe9c22d "materialsim.C",
error=0xbfe9e304) at base/src/TApplication.cxx:898
#43 0xb7909704 in TApplication::ProcessFile (this=0x80eade0, file=0xbfe9c22d
"materialsim.C", error=0xbfe9e304) at base/src/TApplication.cxx:787
#44 0xb790baeb in TApplication::ProcessLine (this=0x80eade0, line=0xbfe9c22a ".x
materialsim.C", sync=false, err=0xbfe9e304)
    at base/src/TApplication.cxx:760
#45 0xb71ab9de in TRint::Run (this=0x80eade0, retrn=false) at rint/src/TRint.cxx:336
#46 0x08048e49 in main (argc=1, argv=0xbfe9e414) at main/src/rmain.cxx:29
(gdb)

Ralf.

File Attachments

1) scr1.jpg, downloaded 2200 times



Subject: Re: TGeoManager and TGeoVolume
Posted by Aleksandra Wronska on Tue, 26 Feb 2008 10:36:52 GMT
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Hi Ralf,

when creating dch geometry, I use the Pandaroot libraries in the macro (and thus have access to the CBMGeom manager and media definitions). I create the media in the macro in order to use them there. Their names are stored in the final geometry file, but not the definitions. So each volume has the information from which material it is built, but you have to make sure later on in the program (when loading the geometry), that the material is created there as well (at least I guess so).

ola

Subject: Re: TGeoManager and TGeoVolume
Posted by Aleksandra Biegun on Tue, 26 Feb 2008 11:56:50 GMT
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Hi Ralf,

I think, even when you do not have information about Media and Materials, you check it into your pandaroot/mvd/MvdMC/PndMvdDetector.cxx class (void PndMvdDetector::ExpandNode(TGeoNode *fN){... function) and the problem with G4 might comes from overlapped volumes in your geometry (I had similar problem with FwEndCap and I

changed TGeoVolume() to TGeoVolumeAssembly()).

Ciao,
Ola.

Subject: Re: TGeoManager and TGeoVolume
Posted by George Serbanut on Tue, 26 Feb 2008 12:19:31 GMT
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Hi,

I experienced that problem as well and I managed to worked around that problem. If you inherit CbmDetector for your class, you have access to gGeoManager which is the simulation manager (the instance of TGeoManager). Once you registered the materials (as materials or mixtures) and media in gGeoManager, all you have to do is to set the geometry which, in the case you are not using the "standard" way (meaning, in ConstructGeometry member), you can register your volumes to gGeoManager by accessing gGeoManager->AddVolume(<volume>), and to access it further (in any other member) by calling gGeoManager->GetVolume("<volume name>"). For more information, have a look on http://root.cern.ch/root/html/TGeoManager.html (gGeoManager is the instance of that class).

You will need one more thing: register your class in the DB (see the examples how to register a class of parameters in DB).

Good luck!
George

Subject: Re: TGeoManager and TGeoVolume
Posted by Ralf Kliemt on Tue, 26 Feb 2008 16:15:04 GMT
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Hi again,

I Did some checks and there are no overlapping volumes. If I run only one event it does not crash and in the resulting sim file the geometry is there! This are the good news. I can drw them, everything seems to be fine.

Now coming to the Problems: After the 7th event Geant4 crashed, Geant3 too.
After commenting the line which set the momentum range it ran... This is not a good sign and here might come soon some further problems. We will see.

So my conclusion is now as simple as this:
To get the geometry out of a file with a TGeoManager objec, just make a script with
Quote:TFile* file = new TFile("../geometry/geo_with_manager.root");
TGeoManager *geoMan = (TGeoManager*) file->Get("ManagerName");
TGeoVolume* topvol = geoMan->GetMasterVolume();

topvol->Export("../geometry/geo_volumes_only.root","VolumeName","recreate ");

And then load these Volumes like in PndMvdDetector::ConstructRootGeometry()
(pandaroot/mvd/MvdMC/MvdDetector.cxx)

Thanks for the help.
Happy greetings from Dresden, Ralf.
