Subject: Problem storing the geometry to a root file
Posted by Ralf Kliemt on Thu, 26 Jul 2007 07:45:45 GMT
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Alexandra Wronska wrote:
Quote:
Hi Ralf,

I am currently looking at the way you implemented the mvd geometry with the root file (in order to follow it for the dch). I have some problems with how the volumes and nodes are added. All physical volumes seem to be sensitive (should it be so?) and, moreover, when after running macro I type:

geo=(TGeoManager*)gROOT->FindObject("CBMGeom");
geo->GetListOfVolumes()->Print();

I get a core dump. This is not the case when one uses the ".geo" interface (checked for the tpc). Do you have any clue? If so, we could chat tomorrow on skype.

Have fun with debugging

ola

Subject: Re: Problem storing the geometry to a root file
Posted by Ralf Kliemt on Thu, 26 Jul 2007 07:46:47 GMT
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Ralf Kliemt replied:
Quote:
Hi Ola,

I have tried to get your problem, but I won't get it.
The main thing is, I think, how the root file geometry is produced. In the Mvd case Tobias Stockmanns did the work here. He built a converter from the step file format to root objects. He pointed out to me that it was somehow important to give a complete TGeoManager into the rootfile itself.

pandaroot/mvd/MvdMC/MvdDetector.cxx is the you should look into, since the volume handling is done there.

Concerning the sensitive volumes there is a list of name parts of your sensitives. The detector names are used to identify them. When the name contains one of the names in the sensitives list, it is added to the sensitive volume list from geant.

like:

```
  fListOfSensitives.push_back("StripSensor");
  fListOfSensitives.push_back("SensorActiveArea");
```

```
bool MvdDetector::CheckIfSensitive(std::string name)
{
  for (int i = 0; i < fListOfSensitives.size(); i++){
    if (name.find(fListOfSensitives[i]) != std::string::npos)
    return true;
  }
  return false;
}
```

```
 if (CheckIfSensitive(v->GetName())){
   AddSensitiveVolume(v);
 }
```

I hope this helps.
Kind regards, Ralf.

PS:
Skype is no problem for me. In any other case I would not have given my name to the list.
I'm a very friend of the pandaroot forum. Maybe I'll put these emails into a thread there...

Subject: Re: Problem storing the geometry to a root file
Posted by Ralf Kliemt on Thu, 26 Jul 2007 07:47:47 GMT
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Alexandra Wronska replied:
Quote:
Hi Ralf,

I create the dch geometry "by hand" (=in a macro) and export it into a file. I tried several options: saving the top node or the complete TGeoManager. The latter failed completely because framework has already

one TGeoManager of its own (CBMGeom) and although they differed by name and were refered to by pointers, the program seemed to be confused anyway

I found your MvdDetector.cxx, of course. Concerning sensitive volumes, my concern was that you add them when looping over nodes, while some nodes are copies of the same volume. There, I guess, there is no need to add it to the list of sensitive volumes many times (?).
What I observed for dch was that although I add explicitely 8 volumes to the list of sensitives, Geant statistics say there are 17 sensitive volumes (all built TGeoVolumes seem to be sensitive).

Anyway, the code works somehow, but the final core dump worries me and I do not know how to fix this. And you say you do not observe it? Do you work in gsi or locally?

Subject: Re: Problem storing the geometry to a root file
Posted by Ralf Kliemt on Thu, 26 Jul 2007 12:33:15 GMT
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In the source of Tobias' converter I found this structure to save the geometry objects into a root file:

```
TGeoManager* geom;

TGeoVolume* topNode;

std::map<std::string,TGeoMedium*> MediumMap;


geom = new TGeoManager("myGeomanager","Production of Root Geometry Objects");


TGeoMaterial *matVacuum = new TGeoMaterial("vacuum",0,0,0);

MediumMap["Vacuum"] = new TGeoMedium("vacuum", 1, matVacuum);


topNode = geom->MakeBox("TOP",MediumMap["Vacuum"],1000,1000,1000);
geom->SetTopVolume(topNode);


[.....]
topNode->AddNode(....);
[.....]


geom->CloseGeometry();
```

geom->Export("myGeo.root");

The main things are, as far as I see, to close the Geo Manager and do the TGeoManager::Export(). Maybe it is enough to store the topNode.... I don't know.

Ralf.

Subject: Re: Problem storing the geometry to a root file
Posted by Aleksandra Wronska on Fri, 27 Jul 2007 12:36:32 GMT
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Hi again, Ralf and others,

the recipe you sent me seems inconsistent with the structure of file MVD14.root. If you simply call gGeoMan->Export(), after re-opening the file you havehas only a key to that gGeoMan, while in your file you get the key to the object of type TGeoVolume.

I am working in gsi.

I do not really know how to debug macros efficiently. If I get a segfault in a certain event, how to get a detailed info which object/method has caused it?

cheers,
ola

Subject: Re: Problem storing the geometry to a root file
Posted by Tobias Stockmanns on Wed, 01 Aug 2007 12:28:59 GMT
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Hi Root-GeoFile-Users,

root is not able to handle two TGeoManagers at the same time. Thus the root file with the MVD geometry data does not have a TGeoManager. Therefore you cannot open this file to view the geometry. This is the reason why I have two options in my CADConverter. One with a TGeoManager and one without. The first is used to check the geometry the second for import into PandaRoot.

The code written in PandaRoot to load in the root geometry files is comming from Mohammad.

I hope this helps a bit.

Cheers,

Tobias
