
Subject: Geometry modification
Posted by [donghee](#) on Thu, 19 Nov 2009 10:23:19 GMT
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Hi all,

I'm trying to modify the geometry for DCH part in Pandaroot.
If it is possible, I would like to know the general way of modification for certain detector.

I would like to get one of my own DCH version with modified stations.
For example, much larger coverage can be introduced and then
very easy studies should be performed with extended DCH stations,
and want to compare result with standard DCH version.

In my knowledge I have to reproduce dch.root with modification at the geometry part.
To do that, firstly I want to know where I have to touch in pandaroot software.
This file (dch.root) is originally prepared by some kind of detector constructor with GEANT
code.
Could you teach me the procedure of producing the root geometry file?

Best regards,
Donghee Kang

Subject: Re: Geometry modification
Posted by [asanchez](#) on Thu, 19 Nov 2009 10:40:57 GMT
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Hi
maybe you can start taking a look into
this root documentation chapter.

<ftp://root.cern.ch/root/doc/18Geometry.pdf>
and then compare with the dch geometry macro
at [trunk/macro/dch/createRootGeoFile.C](#)

best regards and have fun ;D

Alicia S.

Subject: Re: Geometry modification
Posted by [donghee](#) on Thu, 19 Nov 2009 10:54:34 GMT
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Thanks a lot, Alicia

For GEM and DCH that is easy to find constructor from macro directory in macro/dch and
macro/gem
But for the STT or RPC detector I could not find such kind of script. Where are they?

Best wishes,
Donghee

Subject: Re: Geometry modification
Posted by [donghee](#) on Thu, 19 Nov 2009 11:39:24 GMT
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Dear all,

So I have principle a modified GEM and DCH stations in my own version, which have very narrow hole radius in each stations.

Next question must be come how can I throw away the beam pipe?

Due to extension of my GEM and DCH into small angle region, there is a geometry overlap with beam pipe.

So, I need to exclude it (beam pipe).

In passive/PndPipe.cxx all values can be readjusted in principle,

but there should be some easy way using MC run macro without beampipe. Is it existed such kind of way?

Otherwise I have to prepare two different code according to two different PndPipe.cxx version.

Thanks,
Donghee

Subject: Re: Geometry modification
Posted by [StefanoSpataro](#) on Thu, 19 Nov 2009 11:41:42 GMT
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Comment out the line fRun->AddModule(Pipe)

Subject: Re: Geometry modification
Posted by [Lia Lavezzi](#) on Thu, 19 Nov 2009 11:46:21 GMT
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Hi,

the macro for the STT geometry is not on the svn. We are modifying it to create an updated geometry and we will put it in the svn as soon as it is ready.

Do you need just to have a look at it or to modify it?

I ask this because if you need it just to see how to create a "root geometry", the STT macro could not be helpful, since for the STT we have only the .geo files and no .root file: the macro just writes an ascii file (see the straws***.geo).

If you need to modify it or you want to have a look to it, we can put on the repository the "old" macro (the one which we used to create the present geometry). Could it be useful?

Best regards,
Lia.

Subject: Re: Geometry modification
Posted by [donghee](#) on Thu, 19 Nov 2009 12:03:59 GMT
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Dear Lia,

You don't need to put the script for STT, however thank you for your suggestion.

But I have still very general question for .geo file.

Let say the philosophy of .geo file.

Is the geo file acted something like option file? If I change some number within allowing range, is the modification of .geo file translated to simulation level?

or is it fixed and only one have to reproduce .geo file according purpose?

If geo work as an option in the macro, only .root geometry is not convenient tool in some sense.

If there are only .root file existed, for example GEM station, one cannot easily change the geometry in MC run macro.

Is it correct?

Best wishes,
Donghee

Subject: Re: Geometry modification
Posted by [donghee](#) on Thu, 19 Nov 2009 12:05:35 GMT
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You are clever!

Subject: Re: Geometry modification
Posted by [Lia Lavezzi](#) on Thu, 19 Nov 2009 15:13:50 GMT
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Hi,

The geometry can be defined in different ways:

- 1) ascii files (file.geo, for example the stt files)
- 2) root files

3) directly in the detector code

(see http://fairroot.gsi.de/General/Geo_Material_def.htm for a better description)

Concerning the STT geo file: it contains the whole description of the detector and it is fixed, i.e. if you want to modify some parameters of the detector (for example the tubes length) you have either to change directly the file.geo (but this is not convenient!) or change the macro which writes the file (this is the way to do it). It is not driven by any parameter file.

I can't say anything concerning root files (point 2), since I worked only with ascii files up to now and I don't know how the geometry is described there. Maybe someone else can comment on that option.

Best regards,
Lia.
