Subject: Detector geoemtries in own folder
Posted by Tobias Stockmanns on Thu, 16 Apr 2009 14:05:57 GMT
View Forum Message <> Reply to Message

Dear pandaRooters,

I have a very important request.

Please put the geometry of your subdetector in your geometry file into a TGeoVolumeAssembly or something equivalent with the name of your subdetector.

I try to visualize certain events in EVE but switching on and off certain subdetectors is almost impossible because the "Geometry scene" is completely overcrowded by thousands of straw tubes.

If they would be in an STT folder one could switch them on/off by a single click.

Thank you

Tobias

Subject: Re: Detector geoemtries in own folder
Posted by Lia Lavezzi on Fri, 17 Apr 2009 09:19:32 GMT
View Forum Message <> Reply to Message

Hi Tobias,
do you think that putting all the tubes inside a big cylinder filled with air could be a solution? I was wondering if this could create overlap problems or something like this... about the TGeoVolumeAssembly, is it correct that this is a "virtual group" of volumes, in order to group them together avoiding the overlap problem? If so, do you know if there is a way to put the tubes which are defined in the geo file inside a TGeoVolumeAssembly?

Thank you, ciao,
Lia.

Subject: Re: Detector geoemtries in own folder
Posted by Tobias Stockmanns on Fri, 17 Apr 2009 09:30:38 GMT
View Forum Message <> Reply to Message

Dear Lia,

unfortunately there is no way how to use TGeoVolumeAssembly with the geo file. But your first suggestion should work.

Create a cylinder filled with air and put all your straws into this cylinder and not directly into the cave. The straws inside the cylinder do not create overlap problems.

Where you have to be careful is that the cylinder does not interfere with other subdetectors.

But as long as the cylinder stays in the dimensions foreseen for the STT this is not a problem.

Ciao,

Tobias

Subject: Re: Detector geoemtries in own folder
Posted by StefanoSpataro on Fri, 17 Apr 2009 10:15:11 GMT
View Forum Message <> Reply to Message

Hi,
the only thing is that in the middle there is the target pipe, so one should use two hemispheres in order to not overlap with the pipe itself.

Subject: Re: Detector geoemtries in own folder
Posted by Lia Lavezzi on Tue, 21 Apr 2009 11:29:41 GMT
View Forum Message <> Reply to Message

Hi Tobias, Stefano and Mohammad,
I have a problem in inserting the tubes into the two containers (one for each side of the target pipe, as Stefano suggested).

Let me show you the problem: in the first figure attached here you can see the fron view of the STT detector:

In the second figure I try to explain the problem:

I need a shape like the upper one (yellow region), to follow the boundaries of the STT (not to overlap with outer detectors and with the target pipe): it is a sort of cylinder with a cut in the middle.
The only shape I could be able to use is the TUBS, but in this case I have a container which is shaped like in the bottom figure (yellow region again), and so there is the risk to overlap with the target pipe. Even if this did not happen, there would still be the problem that I add a new volume, though filled with air, that forces geant and geane to make a step at the volume boundary, while no forcing is needed here, since the material is the same. So I obtain different hits in the tubes, with respect to the no-container geometry... I would prefer to have a container exactly of the same dimensions/shape of the STT.

Does anyone have any idea how to obtain such a shape? I didn' t find this shape in the usual ones, is it there and I did not see it? This could be obtained with boolean operations, but since I use the .geo file it is not possible I think.

Is this the only option to be able to switch off all the tubes at the same time? Can' t we add some sort of "button" in the display in order to be able to delete all the detectors starting with stt at the same time? Mohammad, what do you think, is this solution feasible?

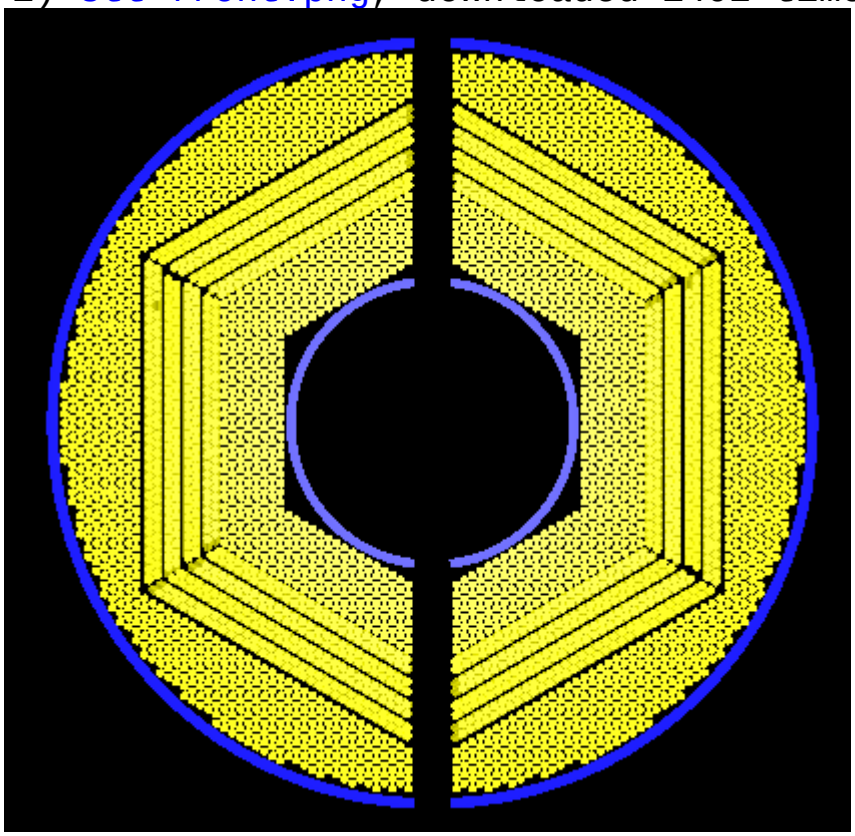
If no other solution exists, I think I should rewrite the algorithm of tube positioning in order not

to use the .geo file anymore, but to contruct the geometry in some other way (I saw some examples), but this will take some time.

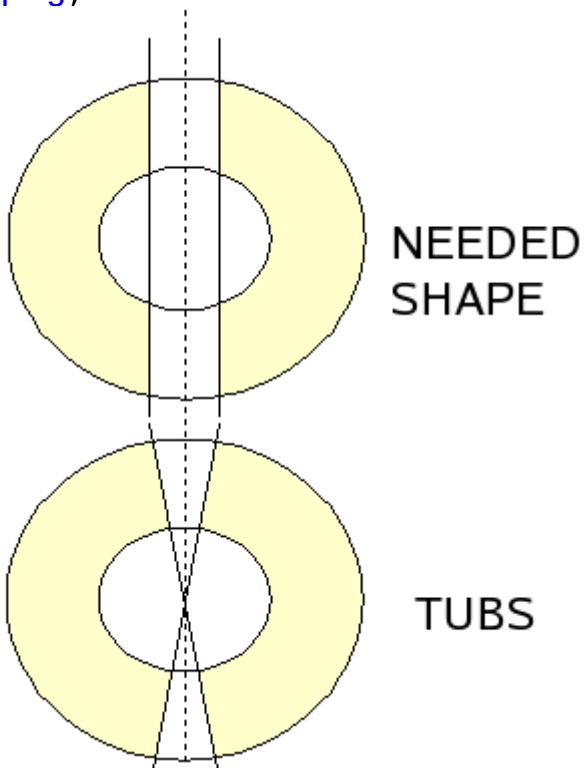
Thank you and ciao,
Lia.

File Attachments

1) stt-front.png, downloaded 1402 times



2) shapes.png, downloaded 1417 times



Subject: Re: Detector geoemtries in own folder
Posted by Tobias Stockmanns on Tue, 21 Apr 2009 11:49:41 GMT
View Forum Message <> Reply to Message

Dear Lia,

I think the only solution which could be done in a geo file is a boolean subtraction between your tube and a box.

But maybe we can find a more general solution implemented into FairDetector. What, if each subdetector automatically creates a TGeoVolumeAssembly with the same name like the file name and all geometries of the file are automatically put into this container and not into the cave?

Maybe Mohammad can comment on this.

Cheers,

Tobias

Subject: Re: Detector geoemtries in own folder
Posted by Anonymous Poster on Tue, 21 Apr 2009 12:47:47 GMT
View Forum Message <> Reply to Message

Hi,

I dont think a box is the right thing. Isnt there a conical shape in the target pipe? Of course you need a different angle than what comes our of tubs. In other words, you would need to subtract a box in the middle which is parallel with the beam pipe axis, and then at every corner another box which has the same angle against the beam pipe axis as the beam pipe itself.

Cheers, Christian

Subject: Re: Detector geoemtries in own folder
Posted by Ralf Kliemt on Tue, 21 Apr 2009 13:40:22 GMT
View Forum Message <> Reply to Message

Hello everyone,

I support Tobias' proposal to let a framework Class take care of the assambly structuring. Naming the assambly like the geometry file which was used might cause problems if someone tries to access a volume directly by the path name.

Kind regards, Ralf.

Subject: Re: Detector geoemtries in own folder
Posted by Mohammad Al-Turany on Tue, 21 Apr 2009 14:55:31 GMT

View Forum Message <> Reply to Message

Hi,

I think the best solution would be to introduce Assemblies to the ASCII interface, and that is exactly what I have done! in r5314 it is there with two examples on pandaroot, the dipole magnet and one of the STT geometries (straws_skewed_blocks.geo) please take a look to it, test it if possible and let me know!

regards

Mohammad

Subject: Re: Detector geoemtries in own folder
Posted by Sebastian Neubert on Tue, 21 Apr 2009 15:02:37 GMT
View Forum Message <> Reply to Message

Hi Mohammad!

Could it be that the FairGeoAssembly is not checked in yet??

Cheers! Sebastian.

Subject: Re: Detector geoemtries in own folder
Posted by StefanoSpataro on Tue, 21 Apr 2009 15:16:22 GMT
View Forum Message <> Reply to Message

I think so.

Subject: Re: Detector geoemtries in own folder
Posted by Mohammad Al-Turany on Tue, 21 Apr 2009 15:21:59 GMT
View Forum Message <> Reply to Message

Hi,

Ok I am getting old!! now it is in SVN!

Sorry

Mohammad

Subject: Re: Detector geoemtries in own folder
Posted by Lia Lavezzi on Wed, 22 Apr 2009 11:10:42 GMT
View Forum Message <> Reply to Message

Hi Mohammad,

I tested the STT file with the assembly and all tests were succesful! Thank you very much!!

I changed also the other STT geometry files (adding a stt01assembly) and tested them: I think they are ok and I committed them to the svn repository.

Ciao,
Lia.

Subject: Re: Detector geoemtries in own folder
Posted by Tobias Stockmanns on Wed, 22 Apr 2009 13:57:10 GMT
View Forum Message <> Reply to Message

Hi Lia,

I have tested it too and it is working.

Thank you for your work.

Cheers,

Tobias
