Subject: Geometry overlaps!!!!!
Posted by Mohammad Al-Turany on Fri, 24 Apr 2009 07:36:52 GMT
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Hallo Detector experts,

It seems that there is a lot of problems in the Panda geometry which couse the simulation to crash specially when using new packages of ROOT and VMC (ROOT 5.23.2, Geant4.9.2.p1, etc). I attached to this mail 2 root files with:

overlaps.root:

obtained using the FullSolenoid.root file for the Soleniod and the macro run_sim1.C.

in this file you will see 447 overlaps! mostly between MDT and Soleniod

V833_overlaps.root:

the same as before with the PandaSolenoidV833.root as geometry file for the Soleniod. THis has also 538 overlaps!

With this geometry as it is now it is almost impossible to run any simulation! I will try to investigate if this has anything to do with the new packages but please take a look also to the overlaps and check your detectors if the geometry is really correct!

To see the overlaps, simply open the attached root file, then open the root browser and double klick the FAIRGeom object (TGeo) the you will see a folder Illegal overlaps:

inside this folder you can see the overlaps:

if you double klick any of these overlaps you will get some info (names and so on) in the terminal and it will be drawn on a canvas:

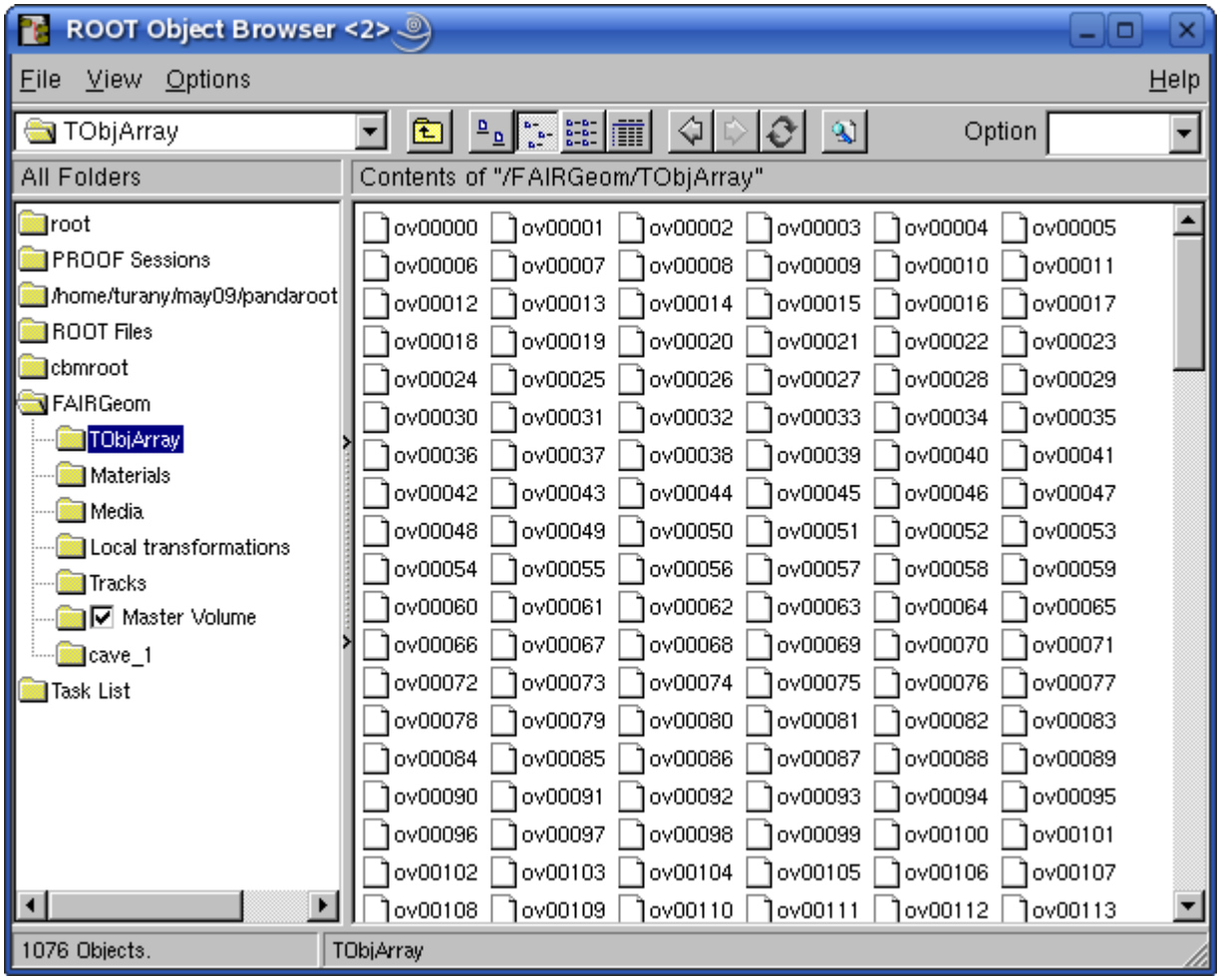
Please check this, most of them are small overlaps which could be avoided by using better precision!

regards

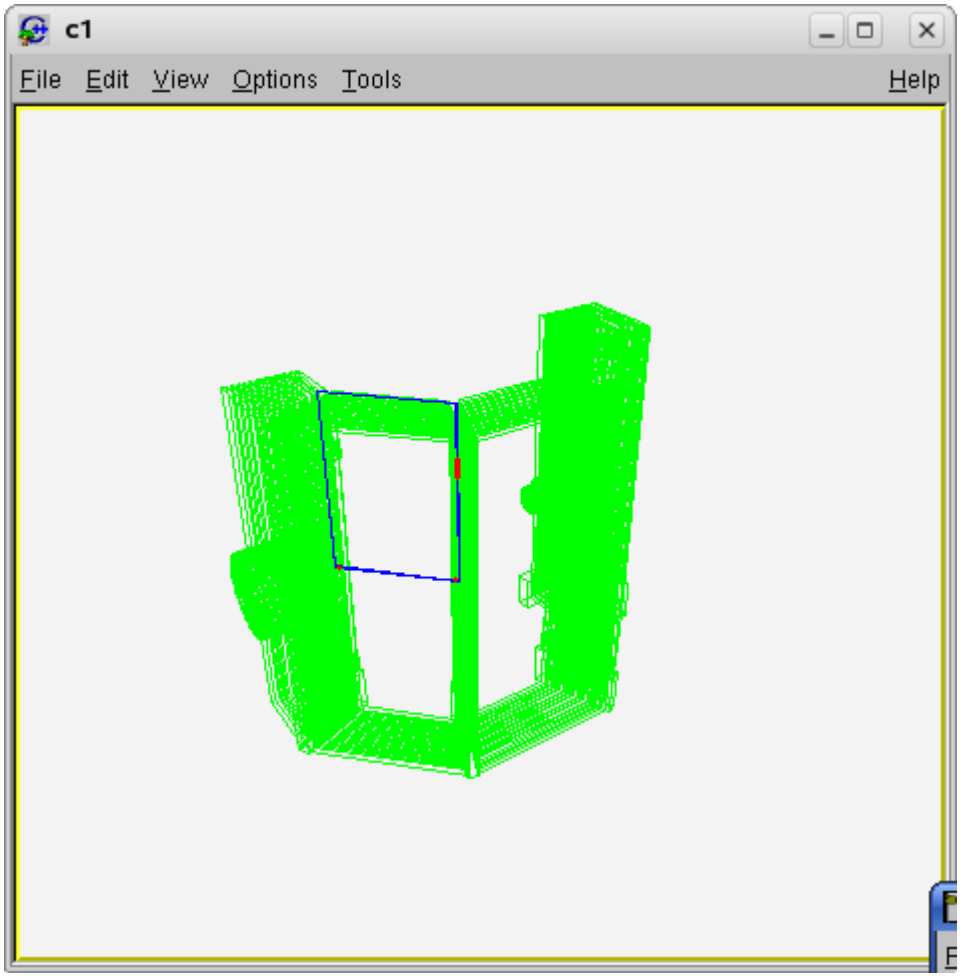
Mohammad

File Attachments

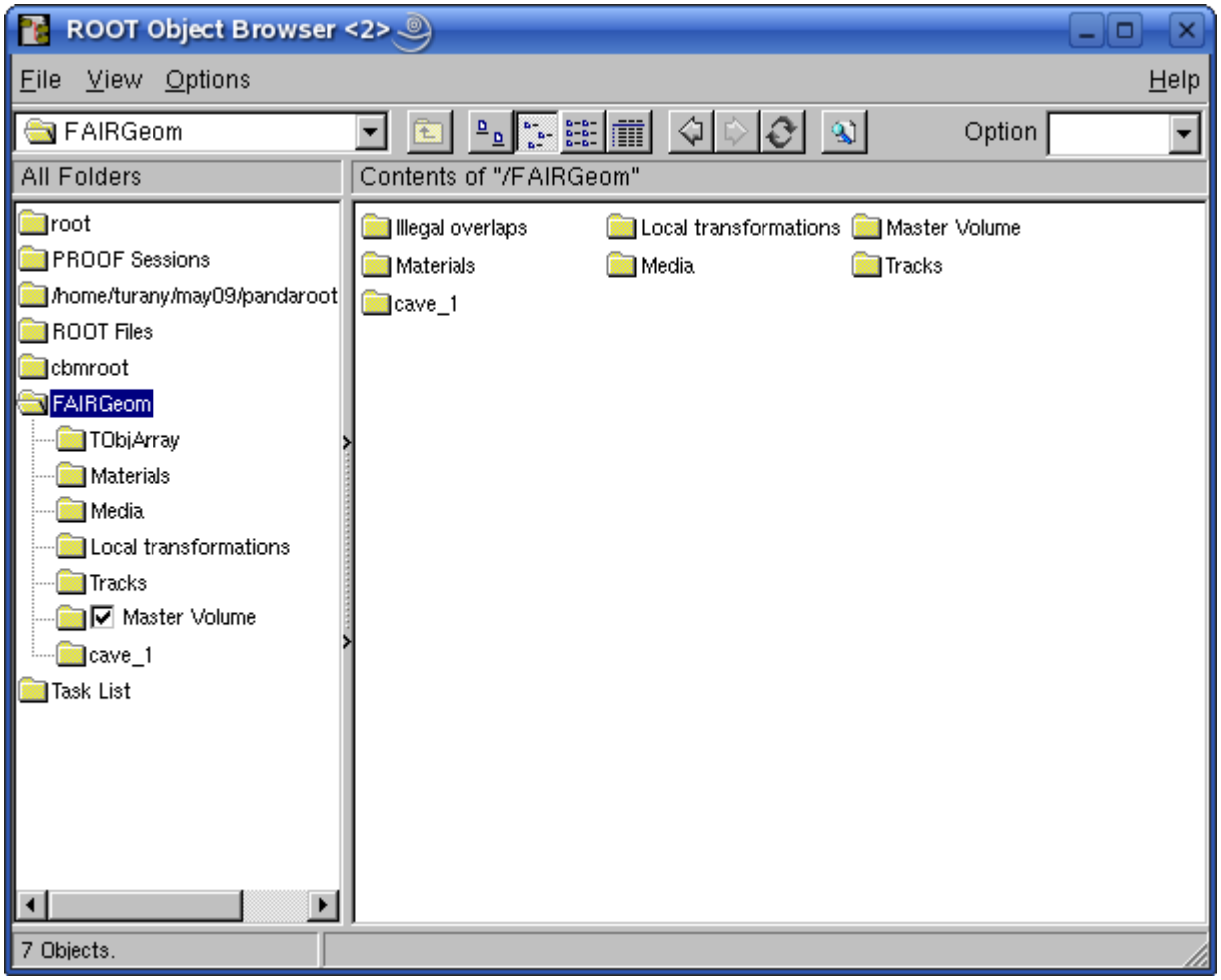
1) snapshot2.png, downloaded 1357 times



2) snapshot3.png, downloaded 1271 times



3) snapshot1.png, downloaded 965 times



4) V833_overlaps.root, downloaded 516 times
5) overlaps.root, downloaded 508 times

Subject: Re: Geometry overlaps!!!!!
Posted by StefanoSpataro on Fri, 24 Apr 2009 07:41:53 GMT
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As far as I know, the mdt geometry inside svn is an old one with overlaps, and it was never updated for the new solenoid design.
For this reason I would suggest to skip mdt from the global sim macro, waiting that the geometry is fixed.

Subject: Re: Geometry overlaps!!!!!
Posted by Tobias Stockmanns on Fri, 24 Apr 2009 08:00:07 GMT
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Hi Mohammad,

can you test if the simulation crashes only with the solenoid and without the MDT?

Thank you,

Tobias

Subject: Re: Geometry overlaps!!!!!
Posted by Mohammad Al-Turany on Fri, 24 Apr 2009 10:10:06 GMT
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Hallo Tobias,

without the MDT it runs, but still some overlaps (36), the root file is attached!

Mohammad

File Attachments
1) overlaps_withoutMDT.root, downloaded 458 times

Subject: Re: Geometry overlaps!!!!!
Posted by Aleksandra Wronska on Thu, 30 Apr 2009 12:41:34 GMT
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Dear Mohammad,

I have just created a new version of the dch geometry file dch.root. It is in line with the PANDA model ver. 912 (so pretty recent). I tested it for overlaps with magnets and found three overlaps with the dipole:

= Overlap ov00000: cave/ms16_0 overlapping cave/dchVol4_0 ovlp=7
= Overlap ov00008: cave/ms17_1 overlapping cave/dchVol4_0 ovlp=2
= Overlap ov00009: cave/ms17_2 overlapping cave/dchVol4_0 ovlp=2

A fast and dirty way to eliminate these overlaps (which cause crashes of simulations) would be to remove the ms16_0, ms17_1, ms17_2 volumes from the dipole.geo file. A better solution would be to update the dipole geometry file to have it in line with the current design version. Another argument in favour of the second solution is that there seem to be overlaps even between the dipole volumes:

= Overlap ov00001: cave/ms16_0 overlapping cave/ms17_1 ovlp=2.96703
= Overlap ov00002: cave/ms16_0 overlapping cave/ms17_2 ovlp=2.96703
= Overlap ov00003:
DownstreamoEndcapoV833/DownstreamEndcap1o1oPartAss_1/DownstreamEndcap1o1 _1
overlapping
DownstreamoEndcapoV833/PlatesOuterCircumferenceo3oPartAss_1/PlatesOuterC
ircumferenceo3_1 ovlp =2.96386
= Overlap ov00004:
DownstreamoEndcapoV833/DownstreamEndcap1o3oPartAss_1/DownstreamEndcap1o3 _1
overlapping
DownstreamoEndcapoV833/PlatesOuterCircumferenceo3oPartAss_1/PlatesOuterC
ircumferenceo3_1 ovlp =2.95181

= Overlap ov00005:
DownstreamoEndcapoV833/DownstreamEndcap1o2oPartAss_1/DownstreamEndcap1o2 _1
overlapping
DownstreamoEndcapoV833/PlatesOuterCircumferenceo3oPartAss_1/PlatesOuterC
ircumferenceo3_1 ovlp =2.89157
= Overlap ov00006:
DownstreamoEndcapoV833/DownstreamEndcap1o5oPartAss_1/DownstreamEndcap1o5 _1
overlapping
DownstreamoEndcapoV833/PlatesOuterCircumferenceo3oPartAss_1/PlatesOuterC
ircumferenceo3_1 ovlp =2.87952
= Overlap ov00007:
DownstreamoEndcapoV833/DownstreamEndcap1o4oPartAss_1/DownstreamEndcap1o4 _1
overlapping
DownstreamoEndcapoV833/PlatesOuterCircumferenceo3oPartAss_1/PlatesOuterC
ircumferenceo3_1 ovlp =2.79518
= Overlap ov00010: cave/md05_3 overlapping cave/md07_2 ovlp=1.86286
= Overlap ov00011: cave/md05_2 overlapping cave/md07_1 ovlp=1.86286
= Overlap ov00012: cave/md05_1 overlapping cave/md07_1 ovlp=1.86286

Will you take care of that?
cheers,
ola

Subject: Re: Geometry overlaps!!!!!
Posted by Mohammad Al-Turany on Thu, 30 Apr 2009 21:33:27 GMT
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Hallo Ola,

if somebody send me the actual geometry of the dipole in TOSCA then yes (but first in the second half of May), and if it is only available as STEP file, then I would ask Tobias if he can convert it.

cheers.

Mohammad
