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Subject: Re: Geometry Problems

Posted by [StefanoSpataro](#) on Wed, 20 Apr 2016 12:08:38 GMT

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StefanoSpataro wrote on 14 September 2015 16:42

Dear all,

after a long delay I put the QA macros inside macro/qa/lmd. I reduced the number of events to 1000 since it is too slow and in some computer it took more than 6 minutes for 2000.

In reality, I noticed that sometimes the sim macro is crashing and I have not understood why.

In particular in my MAC I was not able to run the macros, it crash at event 0. When I am able to run, there are several geant4 errors from the geometry:

```
----- WWWWW ----- G4Exception-START ----- WWWWW -----
```

```
*** G4Exception : GeomNav1002
```

```
    issued by : G4PropagatorInField::ComputeStep()
```

```
Particle is stuck; it will be killed.
```

```
Zero progress for 51 attempted steps.
```

```
Proposed Step is 1.99896e-05 but Step Taken is 1.99896e-05
```

```
in volume lmd_vol_cvd_disc
```

```
*** This is just a warning message. ***
```

```
----- WWWWW ----- G4Exception-END ----- WWWWW -----
```

```
----- WWWWW ----- G4Exception-START ----- WWWWW -----
```

```
*** G4Exception : GeomNav1002
```

```
    issued by : G4PropagatorInField::ComputeStep()
```

```
Particle is stuck; it will be killed.
```

```
Zero progress for 51 attempted steps.
```

```
Proposed Step is 1.74027e-05 but Step Taken is 1.74027e-05
```

```
in volume lmd_vol_vac
```

```
*** This is just a warning message. ***
```

Then maybe the geometry has internal problems. Doing a CheckFullGeometry I found the following:

```
=====
STAGE 2: Global overlap/extrusion checking within 10 microns
=====
```

```
Info in <TGeoNodeMatrix::CheckOverlaps>: Checking overlaps for cave and daughters within 0.001
```

```
Warning in <TGeoChecker::CheckOverlaps>: Volume lmd_vol_ref_sys with 2 daughters but not voxelized
```

```
Check overlaps:  [=====] 1589 [100.00 %]
```

```
Info in <TGeoNodeMatrix::CheckOverlaps>: Number of illegal overlaps/extrusions : 12
```

and

```
=====
STAGE 3: Propagating 1000000 tracks starting from vertex
and counting number of boundary crossings...
=====
```

```
Error in trying to cross boundary of SupportCylinderov831_2 00:00:00
```

Error in trying to cross boundary of SupportCylinderov831\_2 00:00:00  
Error in trying to cross boundary of SupportCylinderov831\_2 00:00:00  
Error in trying to cross boundary of SupportCylinderov831\_1 00:00:00  
Error in trying to cross boundary of SupportCylinderov831\_2 00:00:00  
Error in trying to cross boundary of SupportCylinderov831\_1 00:00:01  
Error in trying to cross boundary of SupportCylinderov831\_1 00:00:01  
Error in trying to cross boundary of SupportCylinderov831\_2

...

I don't know if you have ever seen such problems.

Moreover, I noticed that the reco macro in my Mac is failing, since it seems the trafo\_matrices\_lmd.dat path is hardcoded, and if you change the path of the macro then you have the crash. If it has to be used in the common framework this should become more general, i.e. parameters should be loaded inside some ParameterClass by the standard Ascii file.

To summarize, the lmd qa macros are on the dashboard, but they can fail and the output is not well stable.

Regards

Stefano

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