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Subject: Detector materials with radiation length not equal to zero  
Posted by [Raghav Kunnawalkam](#) on Sun, 11 Mar 2012 18:04:13 GMT  
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Hi All

this may be a very simple or silly question but for the fairrutherford example given in fairroot, all the materials described in the media.geo file have radiation length set to 0. But when i try to give it a non zero value for example

```
gold      1 196.97 79. 19.3
          0.3344 1 20. .0001
          0
```

and try to just build the target (the gold foil), the program just eats up my memory and crashes my computer. (2010 MacBook Pro, 4GB ram, Intel i7 2.66GHz)

Processing run\_rutherford.C...

```
*****
* The Pluto event generator
* Developed by HADES and all contributing AUTHORS
* www-hades.gsi.de/computing/pluto/html/PlutoIndex.html
* Version: 5.37
* Compiled on 26 January 2012
*****
```

```
[INFO ] Media file used : /Users/raghav/fairroot/example/geometry/media.geo
[INFO ] User path for detector geometry : /Users/raghav/fairroot/example/geometry/cave.geo
[INFO ] User path for detector geometry : /Users/raghav/fairroot/example/geometry/target.geo
```

```
-I- Fairlon: New ion Fairlon1, z = 2, a = 4, charge = 2, mass = 3.75309 GeV
[INFO ]===== FairRunSim: Initialising simulation run =====
Info in <TGeoManager::TGeoManager>: Geometry FAIRGeom, FAIR geometry created
-I- FairGeoMedia Read media
(this is where it stops, and i gave it more than 3 hours)
```

But i can build it (and my EIC detector) fine when i say

```
gold      1 196.97 79. 19.3
          0 1 20. .0001
          0
```

Is this some issue with the memory or speed of my computer.

Also i want to look at the radiation length budget of my detector (plot of radiation length budget vs  $\eta$  at const  $z=0$  or  $z$  at constant  $\eta = 0$ ) once i build it with a nonzero radiation length and i understand that i can do it directly from fairroot itself. I tried to look for it but could not find out how to do it.

Any help will be much appreciated

Thanks  
Raghav

Thanks

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