Subject: Energy loss in EMC: bug solved
Posted by StefanoSpataro on Tue, 27 May 2008 09:33:13 GMT
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Dear all,
Ivana has corrected the bug that was present in geant4_vmc with the option "specialCuts":

The cut was applied by mistake also to e+, and due to this, the e+ did not annihilated and so we did not recuperate the energy released in annihilation.

I did some studies with the 5x5 EMC test setup, using the r341 of VirtualMC, and this is the energy deposited for 1000 photons at 1 GeV:

In terms of CPU time, to run 1000 photons at 1GeV:

geant3: 45 s
geant4 all: 274 s
geant4 cuts: 151 s

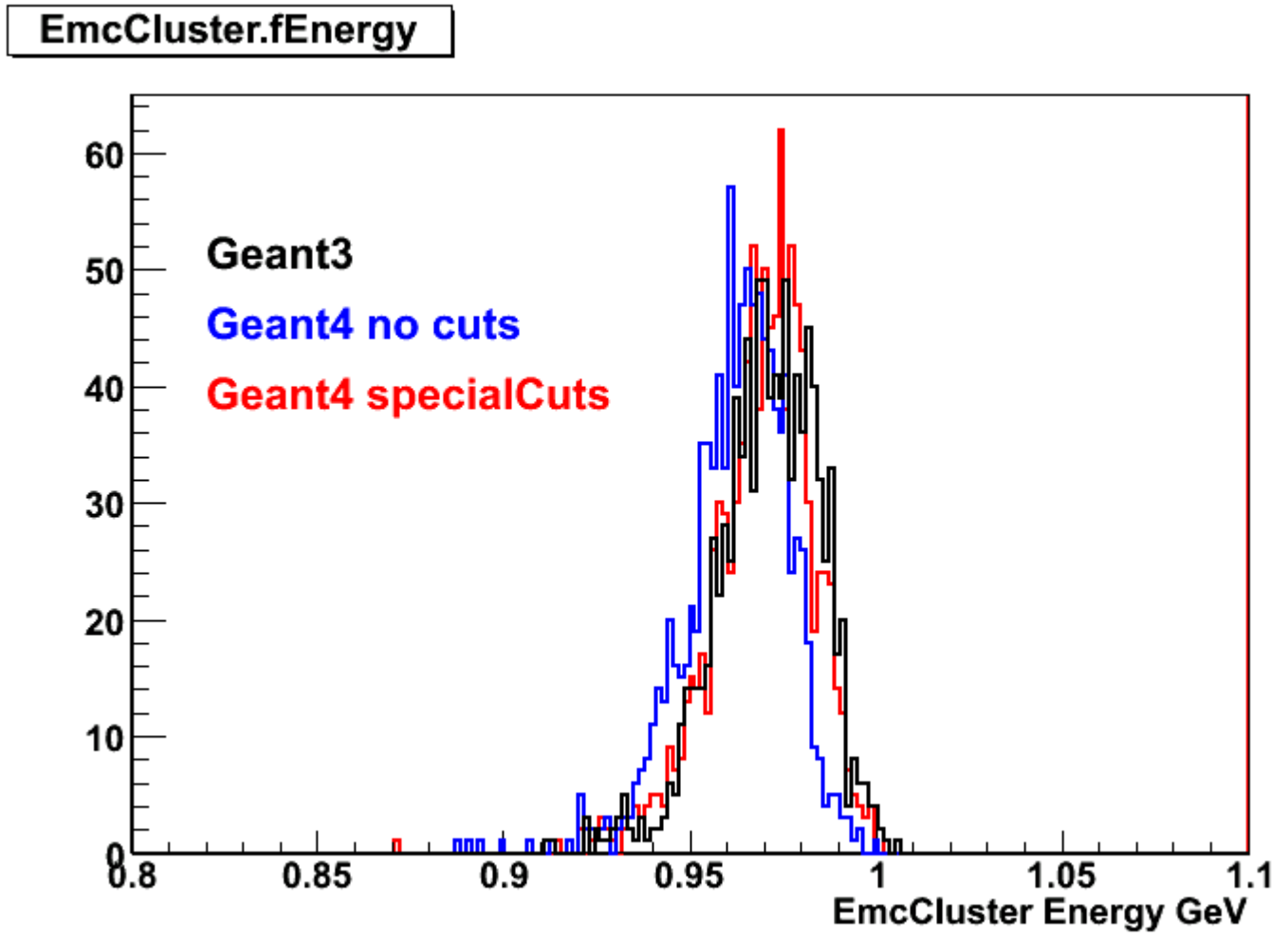
File size:

g3: 57 M
g4 all: 289 M
g4 cuts: 137 M

So, now it seems ok from this side(even if I have to think a bit about the file size-> number of mc points). However further studies should be run in the next future, and with the full geometry.

File Attachments

1) newcomp.gif, downloaded 2395 times


EmcCluster.fEnergy
Geant3
Geant4 no cuts
Geant4 specialCuts
60
50
40
30
20
10
0
0.8
0.85
0.9
0.95
1
1.05
1.1
EmcCluster Energy GeV