Subject: Re: Problem with TGeant4?
Posted by Dmytro Kresan on Tue, 28 Jun 2016 10:43:39 GMT
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Geant3 is well known to reproduce neutron interaction accurately, also for lower energies. We urgently need a Geant3 / Geant4 / Experiment comparison and validation, in order to select the best suitable physics list. Till this is done, I would not trust any Geant4 simulations for NeuLAND.

But still, you can try to improve it. For that you need to modify the file R3BRoot/gconfig/g4r3bconfig.in

1. Comment out the old ion physics with #

#/R3B/phys/addPhysics binary_ion

2. And add two following lines:

/R3B/phys/addPhysics ion_inclxx
/R3B/phys/addPhysics qgsp_bert

3. In addition, in this file you can also set your electron cut (rangeCutForElectron):

/mcPhysics/rangeCutForElectron 1000000. mm

Attached is the distribution of MC tracks showing effect of this new physics list. I suppose the range cuts still have to be adjusted to achieve event better agreement.

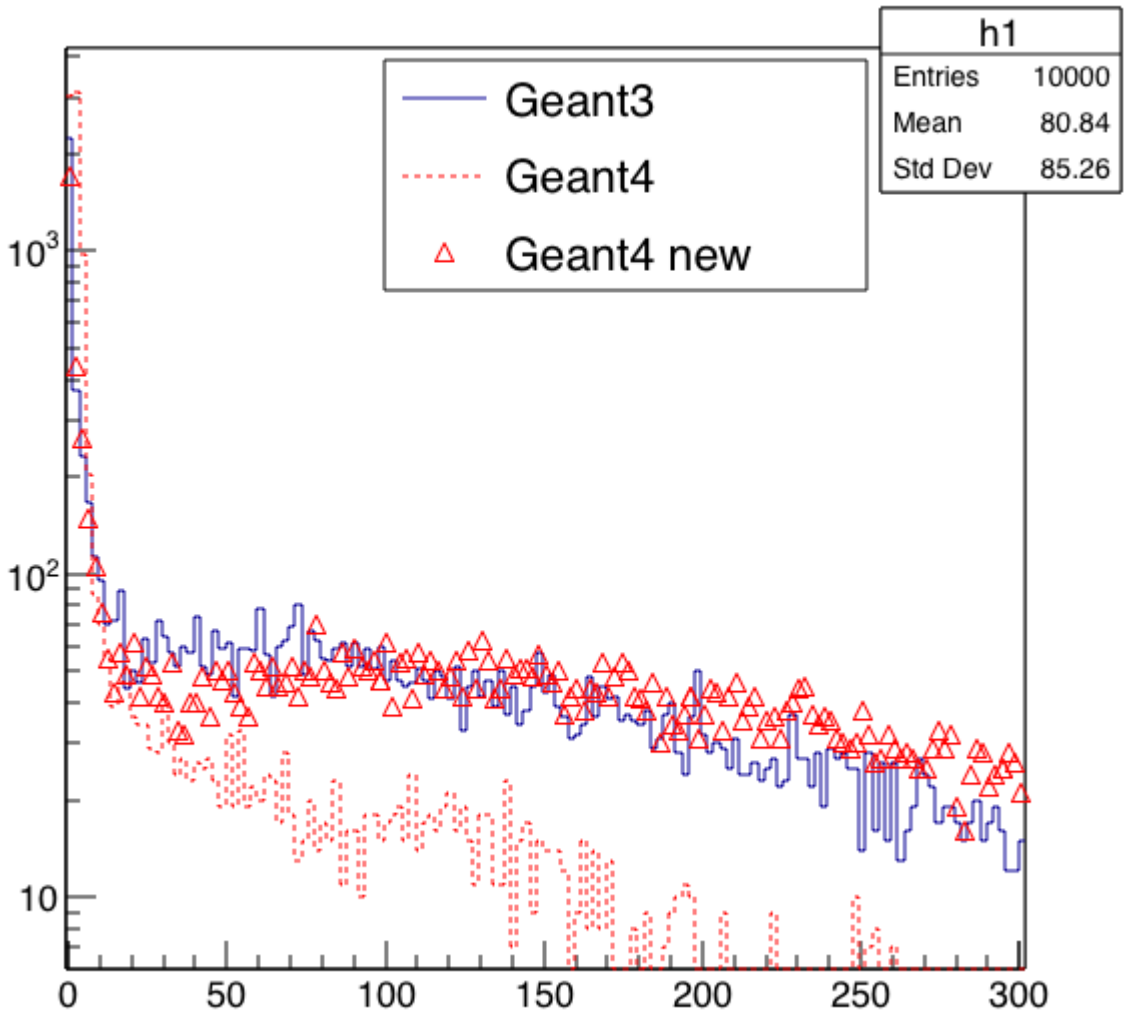
Please note. In case of Geant3, the secondary MC tracks are saved to output only if they produced at least 1 MC point in a detector. To have the same for Geant4, you need to open file R3BRoot/gconfig/g4R3bConfig.C and change line 62 to:

stack->SetMinPoints(1);

Best regards,
Dima

File Attachments

1) c1.png, downloaded 444 times


h1
Entries 10000
Mean 80.84
Std Dev 85.26
Geant3
Geant4
Geant4 new
10^3
10^2
10
0
50
100
150
200
250
300