
Subject: EmProcess threshold

Posted by [Valery Rodionov](#) on Wed, 14 Jan 2009 07:31:29 GMT

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Hi

could you answer my question:

how can I change electromagnetic production threshold in pandaroot?

For example to 100eV?

In G4 it looks like: `G4ProductionCutsTable::GetProductionTable()->SetEnergyRange(100*eV, upprelimit)`

Valera

Subject: Re: EmProcess threshold

Posted by [Mohammad Al-Turany](#) on Wed, 14 Jan 2009 14:38:46 GMT

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Hallo Valery,

The SetCuts in VMC provide Tracking cuts and not the production/threshold cuts so according to Ivana "The threshold can be applied via cuts in range, which are applied per region. With this approach, with unique cut in range we get different cuts in energy per material"

```
/mcPhysics/rangeCut 1 cm
```

```
/mcPhysics/rangeCutForGamma 1 cm
```

from within the `gconfig/g4config.in` with the suitable range cut in mm or cm.

hope this will help you!

Mohammad

Subject: Re: EmProcess threshold

Posted by [Valery Rodionov](#) on Wed, 14 Jan 2009 15:51:13 GMT

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Hi Mohammad

Thank you for an answer

Yes, Geant4 gives an unique treatment of cuts as `_range cuts_`, which are converted to energy in each material.

By changing the range cut for a particle one can not go below

990 eV energy threshold, and this can only be done by changing the `_energy_ cut` in `ProductionCutsTable`. It was my question.

The same situation in the frame of `pandaroot`?

Valera

Subject: Re: EmProcess threshold
Posted by [Mohammad Al-Turany](#) on Thu, 15 Jan 2009 10:06:20 GMT
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Hallo valery,

I asked Ivana about this problem and there is a solution for this, but first in Geant4.9.2 which will be in our next external packages hopefully this month! anyway according to ivana:

Quote:To change the limits for the threshold one can use G4 command:

```
/cuts/setLowEdge 100 eV  
/cuts/setHighEdge 100 GeV
```

These commands interface the function `G4ProductionCutsTable::GetProductionTable()->SetEnergyRange(1000*eV,upprelimit)` which you asked about in your first mail.
In VMC, user can put these command in `g4config.in`

Quote:The command is available in Geant4 9.2 version only (I did not notice it before). If you stay with VMC version 2.5, you need to update from trunk the macro `g4libs.C`.

I plan to tag a new version when there is available also a tag in Root, as we have now introduced (on request of ALICE) the interface for magnetic field.

Regards,

Ivana

So as soon as the new versions are available it will be trivial to set these values!

regards

Mohammad

Subject: Re: EmProcess threshold
Posted by [Valery Rodionov](#) on Thu, 15 Jan 2009 11:29:01 GMT
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Thank you.
