Subject: More track information
Posted by C. A. Douma on Fri, 22 Jan 2016 16:22:28 GMT

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When I run a NeuLAND simulation, in about 5% of the cases, The primary neutron
has an interaction with NeuLAND or with the air without changing its track number.
In this case I only have the starting point of the track available in the MCTrack branch
of the cbmsim-tree, which is the particle gun.

However, I would like to also have the information of the MCTrack branch available
on these interactions.

So is there a way to make R3BRoot not save the MCTrack branch only when a new track is
created,
but also when an existing track changes its direction?

Thanks in advance!
Christiaan Douma.

Subject: Re: More track information
Posted by Dmytro Kresan on Mon, 25 Jan 2016 12:16:53 GMT

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Hello Christiaan,

To do that one would need to define the whole cave with air as an active volume, which will
slow down the simulation dramatically.

Alternatively, one can investigate additional flags / options of Virtual MonteCarlo or Geant3 in
order to force change of track id every time an interaction takes place. Which would be also a
performance kill, since charge particles do multiple scattering, a lot, the size of stack will simply
explode.

Definitely not easy to implement.

Cheers,
Dima

Subject: Re: More track information
Posted by C. A. Douma on Mon, 25 Jan 2016 15:47:39 GMT

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Dear Mr. Kresan,

does Geant3 perform a change of trackID every time?

I understand that the change of trackID on every interaction would be a performance kill.
Nevertheless I would like to know if it is possible and how (for example with changes of flags,

etc).
Then at least I can choose every time I run a simulation whether I think the additional information is required or not.

I do not understand your possible solution to set the air as an active volume. Inside NeuLAND it also happens that there are multiple interactions without change of trackID. And LandPoint does not offer information about the X, Y, Z of these interactions, only about the entering and leaving of the track. If only X, Y, Z of the tracks leaving the cave are stored, how does this help me in getting the X, Y, Z of every interaction (which is what I like to have)?

Yours sincerely,
Christiaan Douma.

Subject: Re: More track information
Posted by Dmytro Kresan on Tue, 26 Jan 2016 07:27:35 GMT
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C. A. Douma wrote on Mon, 25 January 2016 16:47
does Geant3 perform a change of trackID every time?

No, by default it does not.

C. A. Douma wrote on Mon, 25 January 2016 16:47
I understand that the change of trackID on every interaction would be a performance kill. Nevertheless I would like to know if it is possible and how (for example with changes of flags, etc).

I do not know which flags or similar need to be set for this. You can try to look it in the Geant / VMC documentation.

C. A. Douma wrote on Mon, 25 January 2016 16:47
I do not understand your possible solution to set the air as an active volume. Inside NeuLAND it also happens that there are multiple interactions without change of trackID.

If you define cave as an active volume, you will get access to stepping of particles, where you can access the information. You will need additional "detector" class for that.

C. A. Douma wrote on Mon, 25 January 2016 16:47
And LandPoint does not offer information about the X, Y, Z of these interactions, only about the entering and leaving of the track.

LandPoint has to offer exactly what it offers. Transport is meant for the simulation of detector response, and not for tracking of everything everywhere. You have to think about indirect ways to obtain information you need.

Best regards,
Dima

Subject: Re: More track information
Posted by C. A. Douma on Tue, 26 Jan 2016 09:41:16 GMT
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Dear Mr. Kresan,

Thank you for this information. I will first try to find
something in the Geant / VMC documentation.

Christiaan.