Subject: [Inconsistency?] ROOT 6.06 vs. 6.10
Posted by Ralf Kliemt on Tue, 05 Dec 2017 16:42:02 GMT
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Dear all,

We found a severe inconsistency between a minor step-up from ROOT 6.06 to 6.10, effecting our simulations. I tested a FairSoft oct.17 release with FairRoot 17.10a. I installed a second version with the older ROOT version, in order to pin the issue down to ROOT.

From the release notes of ROOT I found that the geometry classes were subject to a larger change in ROOT 6.08.
The effect is, that the track length in the STT (see attached pdf, page 2, upper row, middle) is capped at about 1000.

Did anyone see that effect, too?

Cheers!
Ralf

File Attachments
1) comparing.pdf, downloaded 598 times

Subject: Re: [Inconsistency?] ROOT 6.06 vs. 6.10
Posted by Radoslaw Karabowicz on Wed, 06 Dec 2017 07:48:15 GMT
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Extremely interesting. Is the discrepancy also present in the MCTrack branch?
Number of secondaries? energies?
It is very strange that not all detectors are affected.

Subject: Re: [Inconsistency?] ROOT 6.06 vs. 6.10
Posted by Ralf Kliemt on Wed, 06 Dec 2017 09:58:40 GMT
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Hi Radek,

Yes, we have that already in the MCTrack banch. Good call.
Plots in the pdf below.

This is really worrying.

File Attachments
1) comparing.pdf, downloaded 495 times

Subject: Re: [Inconsistency?] ROOT 6.06 vs. 6.10

Posted by Ralf Kliemt on Wed, 06 Dec 2017 15:49:28 GMT
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It seems ROOT does not like the DIRC support structures. The GEANT stepping aborts very often with
Quote: ** ********************************

* G4Track Information: Particle = mu-, Track ID = 4, Parent ID = 0
** ********************************

Step#	X(mm)	Y(mm)	Z(mm)	KinE(MeV)	dE(MeV)	StepLeng	TrackLeng	NextVolume	ProcName
10002	343	-288	446	1.86e+03	0	0	632	DrcBarSupportS	Transportation
10003	343	-288	446	1.86e+03	0	0	632	DrcBarSupportS	Transportation
10004	343	-288	446	1.86e+03	0	0	632	DrcBarSupportS	Transportation
10005	343	-288	446	1.86e+03	0	0	632	DrcBarSupportS	Transportation

I contacted Roman to investigate further. Attached you'll find my comparison plots with and without the whole DIRC.

Ralf

File Attachments

1) comparing-all.pdf, downloaded 497 times
2) comparing-nodrc.pdf, downloaded 447 times

Subject: Re: [Inconsistency?] ROOT 6.06 vs. 6.10
Posted by Roman Dzhygadlo on Thu, 07 Dec 2017 09:58:45 GMT
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Hi guys,

the issue is connected to the TGeoTubeSeg volume which has problems with new fairsoft packages (root6.10/geant10.2 ?)
I replaced it with TGeoTube with some volume subtraction. With new geometry it looks like everything is fine again.

cheers,
Roman

Subject: Re: [Inconsistency?] ROOT 6.06 vs. 6.10
Posted by Ralf Kliemt on Fri, 15 Dec 2017 09:13:47 GMT
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There was another drc geometry update.
The problems become less. That's good.

You can find the comparison between the root versions below.

Ralf

File Attachments
1) comparing-drcfix2.pdf, downloaded 507 times

Subject: Re: [Inconsistency?] ROOT 6.06 vs. 6.10
Posted by Tobias Stockmanns on Fri, 15 Dec 2017 09:28:18 GMT
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The largest descrepancies seem to be for the straw tube detectors. In Root 6.10 they have much more entries for long track length.
In addition the number of secondaries seems to be less in Root 6.10 (at least the MCTrack.fMotherID does not extend to numbers beyond 800).

What is the suggestion to proceed?

Cheers,

Tobias

Subject: Re: [Inconsistency?] ROOT 6.06 vs. 6.10
Posted by Ralf Kliemt on Fri, 15 Dec 2017 09:53:18 GMT
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Hi.

Since we're looking at a "fresh" bug by root I favor to make the release with Root 6.06, i.e. the "old" FairSoft/FairRoot combination, which is running well, so far. The bug in root seems to be addressed already in their master branch (thanks Radek!) and we shall simply skip the latest FairSoft release until we get the fix.

In the future we'll be more flexible with the alibuild structure!

Cheers!

Ralf