Subject: Re: Group velocity for Cherenkov photon propagation in G3/G4
Posted by Jochen Schwiening on Fri, 28 Jan 2011 18:14:10 GMT
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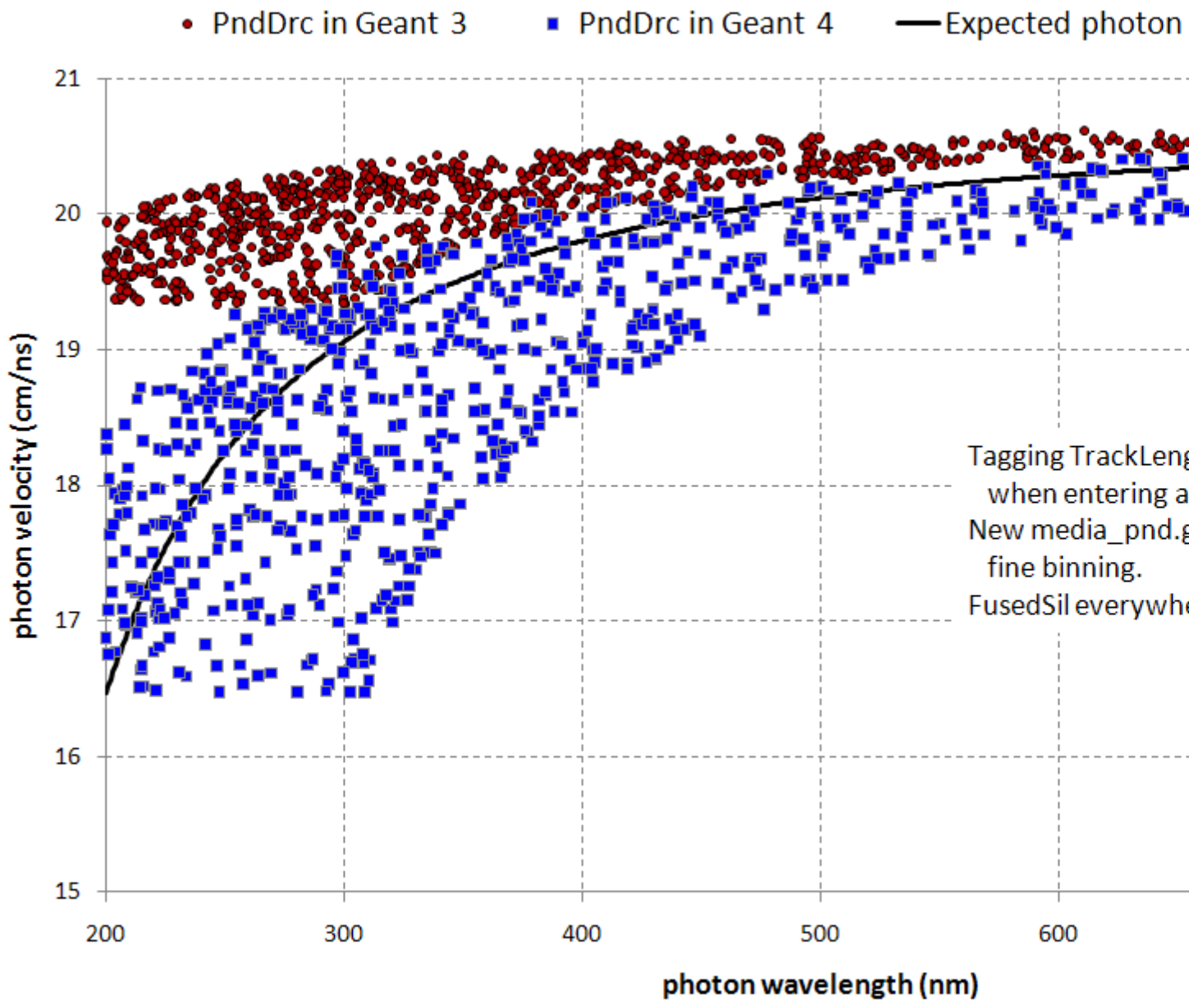
Hi Oliver,

thanks for the check.
Are you plotting the average velocity per wavelength bin or the velocity for each photon? In the events that I looked at the velocity is almost correct on average but there is a huge spread. Would it be possible for you to plot the velocity per photon vs. the photon wavelength from your sample, similar to the scatter plots I have?
I checked the material properties table for FusedSil in the current official media_pnd.geo and it looks OK. The binning could be finer and I applied a table with the equivalent of the 1nm binning you recommended. The spread of v_group for a given wavelength remains the same, as you can see in the attached plot for the finely binned FusedSil.

Cheers,
Jochen

File Attachments

1) pandaroot_geant_v_vs_lambda_new_files.png, downloaded 1681 times


PndDrc in Geant 3
PndDrc in Geant 4
Expected photon
21
20
19
18
17
16
15
200
300
400
500
600
photon velocity (cm/ns)
photon wavelength (nm)
Tagging TrackLeng
when entering a
New media_pnd.g
fine binning.
FusedSil everywhe