Subject: Re: Group velocity for Cherenkov photon propagation in G3/G4
Posted by Jochen Schwiening on Mon, 11 Apr 2011 13:25:24 GMT
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Dear all,

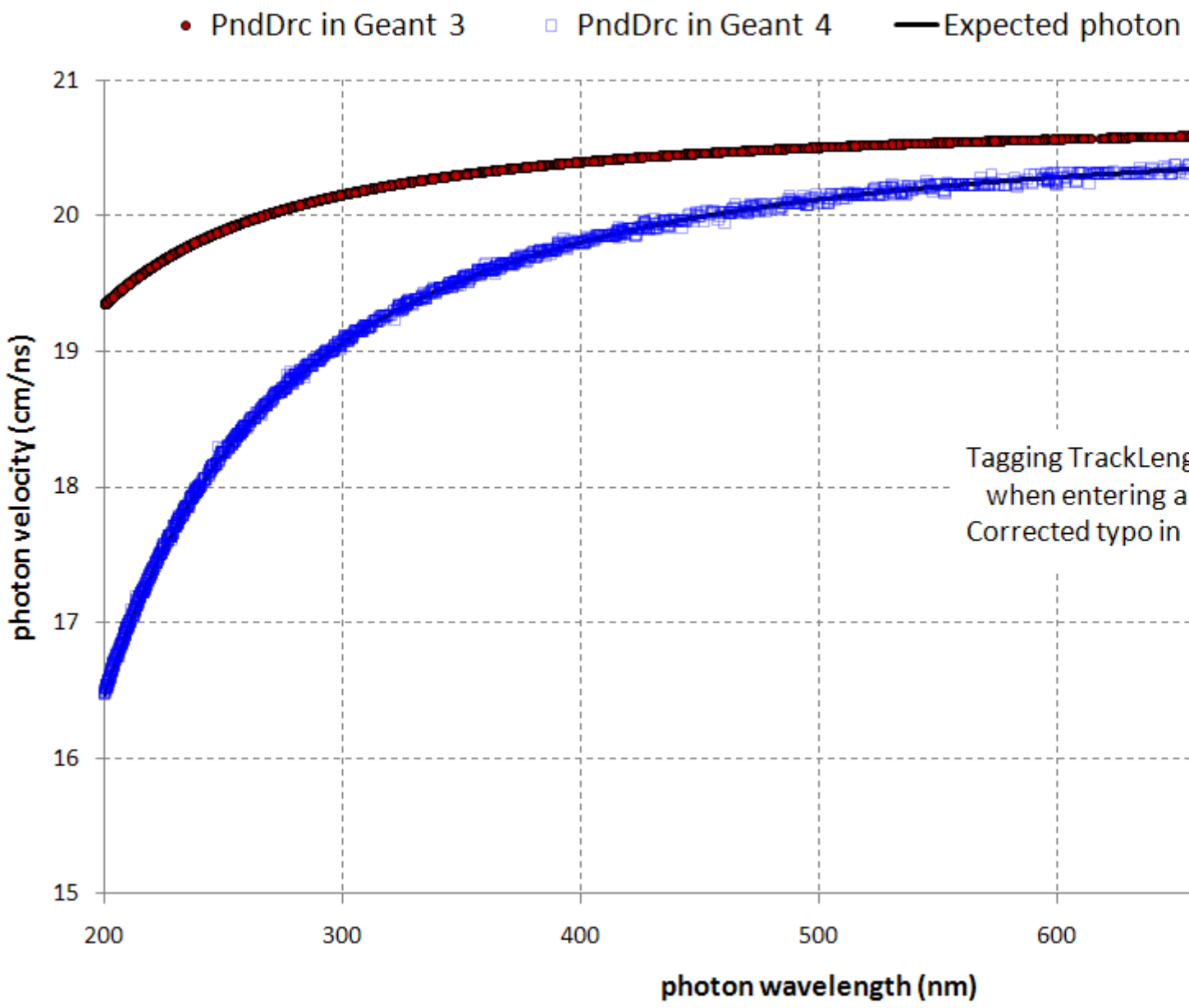
just a follow-up to the still unresolved question of group
velocity for optical photons in G3/G4 in pandaroot.
I found a bug in my code where I calculated the photon energy
(a Y was swapped for a Z due to German/Intl keyboard confusion)
which caused the large scatter observed in previous plots.
When the bug is removed the points all line up nicely on a line
as can be seen in the attached plot.
The very good news is that the Geant 4 points are now pretty
much right on top of my theory line (apart from a very small
remaining scatter, probably due to some very short photon path
segments caused by the photon exiting and re-entering the bar
during each internal reflection).
The not so good news is that the Geant 3 points are still far
away from theory and G4.

Any ideas?

Cheers,
Jochen

File Attachments

1) group_velo_geant_vmc_apr_2011.png, downloaded 1760 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
Corrected typo in