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Subject: geane propagate((CbmTrackParH \*TStart, CbmTrackParP \*TEnd, Int\_t PDG)

Posted by [asanchez](#) on Fri, 02 May 2008 10:00:40 GMT

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Hi to Geane experts,

I have a question concerning the function

Propagate(CbmTrackParH \*TStart, CbmTrackParP \*TEnd, Int\_t PDG)

I would like to calculate the length of a track provided either by genfit or by lhetrack.

In genfit there is now the possibility to obtain the Length (from geane)of the track by using

```
prop = _geane->Propagate(&par,&result,_pdg); //211
```

```
double l=_geane->GetLengthAtPCA();
```

But i see that one should always be able to provide the pdg of the particle.

If one has already a fitted track, and has still access to the track hits(first or last hit in the track),

is it possible to propagate to one volume(point, plane) by giving the track parameters and the position information, without giving the pdg code.

Thanks in advance

ALicia.

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Subject: Re: geane propagate((CbmTrackParH \*TStart, CbmTrackParP \*TEnd, Int\_t PDG)

Posted by [StefanoSpataro](#) on Fri, 02 May 2008 10:04:44 GMT

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You could give just a "standard" pid value, such as the pion one.

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Subject: Re: geane propagate((CbmTrackParH \*TStart, CbmTrackParP \*TEnd, Int\_t PDG)

Posted by [asanchez](#) on Fri, 02 May 2008 10:37:58 GMT

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Hi again,

i have checked the ertrack.F which is called in

propagate(CbmtrackP, cbmtrackP, pdg) at CbmGeanePro.cxx

and so far i have understood(please let me know if i'm wrong)

the pdg code will be use to obtain  
information from the particle which will be used  
to do the propagation to a point, plane volume ,etc

let's assume that after the tracking, i have only tracks  
and i don't have pdg information any more.  
if i don't have the pdg of the particle, means that  
geane will not work??.

Is that the case?

Is there any way to use ertrack only providing track parameters  
from the fit and the start and end position.?

Thanks  
ALicia.

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Subject: Re: geane propagate((CbmTrackParH \*TStart, CbmTrackParP \*TEnd,  
Int\_t PDG)

Posted by [Lia Lavezzi](#) on Fri, 02 May 2008 13:10:03 GMT

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Hi Alicia,

you need to give the PDG code to GEANE because otherwise GEANE does not know which  
particle it has to propagate through the detector. The tracking is made just like in the Monte  
Carlo (geant3) with all the random effects switched off, so GEANE needs to know the PDG  
code of the particle in order to propagate it with the correct energy loss and so on...

Pay attention to the fact that if you track a particle with the wrong PDG code GEANE results  
will not be reliable: it will calculate its predictions for the wrong particle.

For the moment I could suggest you to use the MC truth to get the PDG code of the tracks and  
use it for GEANE.

Ciao,  
Lia.