
Subject: Charge in FairTrackPar and GeaneTrackRep
Posted by [Stefano Spataro](#) on Fri, 22 Oct 2010 04:11:13 GMT
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Hi,

I have seen that in the constructors of FairTrackPar and GeaneTrackRep the charge is defined as integer and double respectively.
This leaves the following warning:

/.../trunk/GenfitTools/trackrep/GeaneTrackRep/GeaneTrackRep.cxx:53: warning: passing 'double' for argument 5 to 'FairTrackParP::FairTrackParP(TVector3, TVector3, TVector3, TVector3, Int_t, TVector3, TVector3, TVector3)'
and not only, due to the following lines:

```
GeaneTrackRep::GeaneTrackRep(FairGeanePro* geane,
                             const GFDetPlane& plane,
                             const TVector3& mom,
                             const TVector3& poserr,
                             const TVector3& momerr,
                             double q,
                             int PDGCode)
: GFabsTrackRep(5, _geane(geane), _pdg(PDGCode), _backw(0)
{
    FairTrackParP
    par(plane.getO(),mom,poserr,momerr,q,plane.getO(),plane.getU(),plane.getV());(5th parameter
-> q).
```

I think both objects should use the same kind of variable, to be much less "error prone".
Indeed, the conversion from double to integer is dangerous:

```
int(0.9999999) = 0
```

I think this is quite important! Even other tracking codes should be changed to use a common standard for the particle charge, by substitution of all the current conversions (once fixed if it is better to use int or double).

Subject: Re: Charge in FairTrackPar and GeaneTrackRep
Posted by [Anonymous Poster](#) on Fri, 22 Oct 2010 04:16:20 GMT
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Hi,

in principle the charge could be eliminated from the ctor of GeaneTrackRep, since it is fixed by the PDG id.

I am not sure what is the better choice for the charge (int vs. double). I guess int is enough. I absolutely agree that we should fix it to one of them.

Cheers, Christian

Subject: Re: Charge in FairTrackPar and GeaneTrackRep

Posted by [Lia Lavezzi](#) on Fri, 22 Oct 2010 08:24:00 GMT

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Hi,

I remember some time ago it was decided to use the integer for the charge in geane interface and, in trackbase, all the double were changed to int with the function TMath::Sign, e.g.:

```
fq = (int)TMath::Sign(1.0, fQp);
```

to avoid bad conversions.

Ciao,

Lia.

Subject: Re: Charge in FairTrackPar and GeaneTrackRep

Posted by [StefanoSpataro](#) on Sun, 24 Oct 2010 03:41:46 GMT

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Then we could modify GeaneTrackRep in order to get an integer, or maybe it would be better to put the proper conversion in the "double" constructor and add a new GeaneTrackRep constructor which takes also integer charge, in order to have no need of modifications in other parts of the code (we should be double-safe in this case).

Subject: Re: Charge in FairTrackPar and GeaneTrackRep

Posted by [StefanoSpataro](#) on Wed, 27 Oct 2010 09:26:21 GMT

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Hi,

I have committed the code in svn, so that we have a "proper" double constructor (uwing TMath::Sign), and also a int constructor.

If you don't like this solution, just scream!
