Subject: Re: Helix and FairTrackParH
Posted by StefanoSpataro on Thu, 23 Jul 2009 18:04:46 GMT
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Lia Lavezzi wrote on Thu, 23 July 2009 19:41
1) in FairTrackParH you have the 5 parameters: q/p, lambda, phi, yperp, zperp.
q/p is the charge over momentum, lambda and phi are the dip and polar angles which describe the direction of the particle, yperp and zperp are the coordinates of the point in the SC reference frame (the one perpendicular to the momentum). Using the functions of that class you can also get the position and momentum in the master reference frame;

Let me correct you, in FairTrackParH the parameters are:

```
/** fLm = Dip angle **/
Double_t fLm;
/**fPhi = azimuthal angle **/
Double_t fPhi;
/** Points coordinates in SC system */
Double_t fX_sc, fY_sc, fZ_sc;
```

Or at least these are the data members and the parameters used in the helix constructor.
There is no xperp, yperp and phi0, but x_sc, y_sc, z_sc and phi.
Apart from lambda I have no idea on what the other parameters are.

Quote:
2) in the equations you cited from my thesis, x0, y0, z0 define the starting point of the helix, phi0 is the azimuthal angle of the starting point with respect to the helix axis, lambda is the dip angle and Rh is the radius of curvature of the helix.

So, I don' t think you can directly apply the equations in 2) to the track from 1) since phi and phi0 should be different: in fact phi0 is calculated with respect to the helix axis and so they would coincide only if the helix axis was coincident with the beam.

Well, can I consider x_sc y_sx z_sc as the starting point of the helix? In this case can phi be considered as phi0?

Quote:
If you want to apply the x(s), y(s), z(s) equations you should choose as starting point the one you get with GetPosition in FairTrackParH and then apply them, but you have to calculate the corresponding phi0, since it is not directly given by GetPhi in FairTrackParH.
...

For this reason I think it would be good to have written somewhere thh definition of the FairTrackParH parameters, to avoid misunderstanding (such as phi and phi0) and in order to avoid ambiguity.