Subject: STT helix fit output parameters. Posted by Lia Lavezzi on Tue, 22 Apr 2008 10:22:20 GMT View Forum Message <> Reply to Message

Hi,

as said during the EVO meeting I write down here the output parameters of the STT reconstruction.

The helix fit parameters are the following ones: d0, phi0, R, z0, tan(lambda) where:

- d0 is the distance of closest approach of the track to the origin (see also the attached figure);

- phi0 is the azimuthal angle of the point of closest approach [phi0 = $\arctan(yc/xc)$ with (xc, yc)

= center of curvature coordinates];

- R is the curvature radius of the track in the xy plane;

- z0 is the z coordinate of the point of closest approach calculated in xy plane;

- tan(lambda) is the tangent of the dip angle, the slope of the straight line in z - track length * cos(lambda) plane.

The parameters can be accessed by the following functions:

Double_t d0= pTrack->GetParamLast()->GetX();Double_t phi0= pTrack->GetParamLast()->GetY();Double_t R= pTrack->GetParamLast()->GetTx();Double_t z0= pTrack->GetParamLast()->GetZ();Double_t tanl= pTrack->GetParamLast()->GetTy();

and the transverse and longitudinal momenta can be calculated:

Double_t ptran = 0.003 * 2 * R Double_t plong = ptran * tanl

...and, from them, finally ptot = sqrt(plong*plong + ptran*ptran)

Best regards, Lia.

Edited on Jan 14, 2010:

The parameter access functions have changed:

Double_t d0 = pTrack->GetDist(); Double_t phi0 = pTrack->GetPhi(); Double_t R = pTrack->GetRad(); Double_t z0 = pTrack->GetZ();

Double_t tanl = pTrack->GetTanL();

File Attachments 1) paramxy.ps, downloaded 661 times