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Subject: Re: new in AbsTrackRep: extrapolateToLine and consequences on WirepointHitPolicy

Posted by [Lia Lavezzi](#) on Tue, 17 Mar 2009 17:13:41 GMT

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Hi,

I am trying to "move" the code from the stt reco hit to the extrapolateToLine, but there are some problems:

1) in the stt reco code we only find the point of closest approach to the wire and from this we build the detector plane, but looking at the extrapolateToLine function I see that we want a complete extrapolation, with the state/cov/detPlane predictions... and this brings me to the second problem...

2) the easiest way to do this is to use the geane PropagateToVirtualPlaneAtPCA: this function calculates the point of closest approach to the wire, builds the plane (in the STT usual way) and performs the propagation to this plane. This would give the right result, but doing things this way we would have the propagation from the starting point to the detPlane twice for each kalman step (one here when the plane is built, the other when the Kalman extrapolation is performed). I had also a quick look into the extrapolateToPoca and I see the same problem there...

Given these two considerations, wouldn't it be better to have here (to be used in the detector plane determination) two findPocaToPoint/ToLine functions, which only find the poca, in addition to (or in substitution of) the two extrapolateToLine/ToPoca functions ? They could also give the detector plane or this could be left in the detPlane(...) functions.

Another solution could be to leave the extrapolateToPoca/ToLine, but to avoid to repeat it with the usual extrapolate call into Kalman::processHit.

What do you think?

I could also write the function with the PropagateToVirtualPlaneAtPCA solution for now and leave the decision to a later stage...

Ciao,  
Lia.