Subject: GEANE backward propagation
Posted by Sebastian Neubert on Wed, 18 Jun 2008 08:07:59 GMT
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Hi Lia!

I use GeaneTrackRep to do some backward propagations to extroplate Tracks back to the z-Axis / Target. A lot (>50%) of these propagations simply fail and I do not know why. I cannot see any clear pattern which tracks are affected.

Are you aware of such problems?

How can we find out why the propagation fails?

Cheers! Sebastian.

Subject: Re: GEANE backward propagation
Posted by Lia Lavezzi on Wed, 18 Jun 2008 09:08:07 GMT
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Hi Sebastian,
are you using the GeaneTrackRep::extrapolate(const DetPlane& pl, TMatrixT<double>& statePred, TMatrixT<double>& covPred, TMatrixT<double>& jacobian)) function? Because in that function I see that when backprop is true you call _geane->setBackProp() which sets fPropOption="BLE" but in that case GEANE would make the back-propagation to a specific tracklength ("L" option), while what we want here is to back-propagate to a plane: so in this case it should be fPropOption="BPE".

Hope this helps,
Lia.

Subject: Re: GEANE backward propagation
Posted by Sebastian Neubert on Wed, 18 Jun 2008 09:18:49 GMT
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Hi Lia!

That is already an good hint! How can I set the correct option?

Yet for my problem at hand I am mostly using GeaneTrackRep::getPocaOnLine where I call _geane->BackTrackToVirtualPlaneAtPCA(2); And this causes the problems. Is there a similar thing here?

Cheers!
Sebastian.

Subject: Re: GEANE backward propagation
Posted by Lia Lavezzi on Wed, 18 Jun 2008 11:15:19 GMT
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Quote:How can I set the correct option?

I think the CbmGeanePro function setBackProp() has been created by you, so I don' t exactly now where you use it (only here or somewhere else). My suggestion is that if you use it only here (where the "BPE" option is required) you can change directly that function, while if you need the setBackProp() function to set "BLE" somewhere else, you could add a new function to CbmGeanePro, something like setBackPropToPlane {fPropOption = "BPE";}.

Concerning the _geane->BackTrackToVirtualPlaneAtPCA(2) I used it in stt local Kalman and it worked fine for me... it sets the propagation in two steps: first it finds the PCA with the CbmGeanePro::FindPca(...) function, it creates the virtual plane here and then it makes the actual propagation (the PropagateFromPlane is set internally, it is not necessary to set it before).

Does it fail while finding the PCA (in FindPca, when it calls ERTRAK) or later when doing the propagation (in the usual Propagate(PDG) function)?

Ciao,
Lia.

Subject: Re: GEANE backward propagation
Posted by Sebastian Neubert on Wed, 18 Jun 2008 12:58:53 GMT
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Hi!

It fails in the usual Propagate Function. That means the function returns false.

Cheers!
Sebastian.

Subject: Re: GEANE backward propagation
Posted by Lia Lavezzi on Wed, 18 Jun 2008 13:09:14 GMT
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Hi Sebastian,
I just uploaded to svn a fixed CbmGeanePro: in the old one there was a too restrictive check for orthogonality of the virtual plane axes. Please try updating your geane directory and check if the failure happens again so often.

Ciao,
Lia.

Subject: Re: GEANE backward propagation
Posted by Sebastian Neubert on Wed, 18 Jun 2008 13:44:23 GMT
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Hi Lia! You are a darling!
That was it! Now it works quite well!!!

Thanks!
Sebastian.

PS: I will check in an updated version of the setPropDir function in cbmGeanePro later.