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Subject: GEANE extrpolate to point of closest approach  
Posted by [Anonymous Poster](#) on Thu, 10 Apr 2008 13:42:06 GMT  
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Hi GEANE experts,

I am interested in extrapolations to points of closest approach to arbitrary space points. I am very new to using GEANE, so a detailed answer (a.k.a. GEANE for dummies) would be very helpful

I can see that there are methods like

```
Bool_t SetWire(TVector3 extremity1, TVector3 extremity2);
Bool_t SetPoint(TVector3 pnt);
Bool_t PropagateToPCA(Int_t pca);
int FindPCA(Int_t pca, Int_t PDGCode, TVector3 point, TVector3 wire1, TVector3 wire2,
Double_t maxdistance, Double_t &Ra
d, TVector3 &vpf, TVector3 &vwi, Double_t &Di, Float_t &trklength);
TVector3 GetPCAOnWire() { return vwi; }
TVector3 GetPCAOnTrack() { return vpf; }
Float_t GetLengthAtPCA() { return trklength; }
Bool_t PropagateToVirtualPlaneAtPCA(Int_t pca);
Bool_t BackTrackToVertex();
Bool_t BackTrackToVirtualPlaneAtPCA(Int_t pca);
```

So, I guess that some combination of these will be my answer. An example code I would need would have this as an input:

```
TVector3 mySpacePoint(x0,y0,z0);
```

And the output:

```
TVector3
pointInPOCAPlane
vectorPerp1ToTrackInPOCA
vectorPerp2ToTrackInPOCA
```

or

```
TVector3
pointInPOCAPlane
vectorInTrackDirectionInPOCA
```

Thanks you very much in advance!!

Bye, Christian