Subject: About FairGeanePro
Posted by Jifeng Hu on Thu, 10 Oct 2013 16:20:28 GMT
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Hi, All,
  who has experiences of FairGeanePro propagation, please have a look at my usage and results, I think I got some wrong results.
For 2 GeV momentum pion from the origin (0,0,0), isotropically generated, the flying path is expected to be the EMC shower center position. To do that, the codes are listed (see also PndPidCorrelator.cxx):

```
0. Bool_t PndPidCorrelator::GetEmcInfo(FairTrackParH* helix, PndPidCandidate* pidCand) {
1. FairGeanePro *fProEmc = new FairGeanePro();
2. for (Int_t ee = 0; ee<emcEntries; ee++){
3.    PndEmcCluster *emcHit = (PndEmcCluster*)fEmcCluster->At(ee);
4.    TVector3 emcPos = emcHit->where();
5.    fProEmc->SetPoint(emcPos);
6.    fProEmc->PropagateToPCA(1, 1);
7.    FairTrackParH *fRes= new FairTrackParH();
8.    Bool_t rc =  fProEmc->Propagate(helix, fRes, fPidHyp*pidCand->GetCharge()); // First propagation at module
9.    if (!rc) continue;
10.   emcGLength = fProEmc->GetLengthAtPCA();
11. }
22.}
```

emcGLength is extracted as the flying path. see its distribution in barrel.eps for Barrel Calorimeter, and so on.
see the Panda TDR:
 http://www-panda.gsi.de/archive/public/panda_tpr.pdf

the geometry tell us the flying path is wrong.
Someone can tell me where I incorrectly make use of FairGeanePro class.

File Attachments

1) backward.eps, downloaded 635 times
2) forward.eps, downloaded 662 times
3) barrel.eps, downloaded 650 times
4) shashylik.eps, downloaded 656 times

Subject: Re: About FairGeanePro
Posted by StefanoSpataro on Thu, 10 Oct 2013 16:40:02 GMT
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Sorry,
what is exactly wrong in these plots? They look fine to me, apart from some high lenght background due probably to some propagation/tracking problem.

Subject: Re: About FairGeanePro
Posted by Jifeng Hu on Fri, 11 Oct 2013 07:30:01 GMT
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Stefano Spataro wrote on Thu, 10 October 2013 18:40Sorry,
what is exactly wrong in these plots? They look fine to me, apart from some high lenght background due probably to some propagation/tracking problem.

Well, maybe I misunderstand the flying path after propagation.
That means FairGeanePro only returns the length between last point of helix to EMC hit point, if yes, those distributions look good.

Here the flying path should be longer than the straight line from vertex to EMC hit position. I thought it the total length of one track, since I only read the code instead of the document.

Subject: Re: About FairGeanePro
Posted by StefanoSpataro on Fri, 11 Oct 2013 09:04:01 GMT
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Exactly, this is only the propagation lenght. In your case the propagation starts from the last point of STT and reaches EMC.
If you check the TofInfo function, you can see how to calculate the full lenght of the track from the interaction vertex.

Subject: Re: About FairGeanePro
Posted by Jifeng Hu on Fri, 11 Oct 2013 09:40:24 GMT
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Thanks, Stefano. I got it.