Subject: PndKinVtxFitter. Does FitAll() work?
Posted by Dima Melnychuk on Fri, 28 Mar 2014 11:10:15 GMT
View Forum Message <> Reply to Message

Hi,

I try at the moment to make a comparison of full vs fast simulation for eta_c-> phi phi -> K+ K- K+ K- decay.
I did this analysis for central tracker TDR and I am updating the analysis macro.

I have a problem with vertex fitter PndKinVtxFitter if I want to access fitted daughter particles after the fit.

The code

PndKinVtxFitter vtxfitter(etac_vtx[j]);
vtxfitter.Fit();

works, but dauthers are unfitted:

RhoCandidate *etacfit=etac_vtx[j]->GetFit();
k1 = etacfit->Daughter(0);

I tried

k1 = etacfit->Daughter(0)->GetFit();

and it returns 0.

But the code

PndKinVtxFitter vtxfitter(etac_vtx[j]);
vtxfitter.FitAll();

which should work according to documentation
(https://panda-wiki.gsi.de/foswiki/bin/view/Computing/PandaRootAnalysisJuly13#A_5.1_PndKinVtxFitter_45_Vertex_and_kinematic_fitting)
produce the
chi2_vtx=-9999 (chi2_vtx=vtxfitter.GetChi2()),

whereas with vtxfitter.Fit() chi2 were reasonable values.

So did anybody (means Ralf or Klaus) check PndKinVtxFitter::FitAll()?

Dima

Subject: Re: PndKinVtxFitter. Does FitAll() work?
Posted by Ralf Kliemt on Fri, 28 Mar 2014 12:25:41 GMT

View Forum Message <> Reply to Message

Hello Dima,

It is supposed to work. Please send me a data sample and your analysis macro. I'll check from there.

Cheers
Ralf

Subject: Re: PndKinVtxFitter. Does FitAll() work?
Posted by Dima Melnychuk on Fri, 28 Mar 2014 12:41:42 GMT
View Forum Message <> Reply to Message

Hi Ralf,

I put data sample (100 events) and analysis macro (run_ana_etac.C) at gsi network under /d/panda02/dmelnych/etac_data.tar.gz

Dima

Subject: Re: PndKinVtxFitter. Does FitAll() work?
Posted by Ralf Kliemt on Fri, 28 Mar 2014 14:02:15 GMT
View Forum Message <> Reply to Message

Hi Dima,

I found some issues.

First: I fixed the FitAll() to also fit the head of the decay tree. It was a "logic bug", just update (at least rho).
Second: In your special case Fit() would have sufficed as you only have one decay node in your etac_vtx candidate list.
Third: When selecting your best kaons you tried to access the Fit() of a fitted kaon (etacfit has the fitted daughters), giving you the null pointer.
Fourth: After fixing these things I got more errors in the block which was never reached before. I leave that to you to fix.

Cheers
Ralf

Subject: Re: PndKinVtxFitter. Does FitAll() work?
Posted by Dima Melnychuk on Fri, 28 Mar 2014 14:20:34 GMT
View Forum Message <> Reply to Message

Many thanks, Ralf.

So for certanity I would like to clarify how to access fitted daughters.

k1 = etacfit->Daughter(0);

or

k1 = etacfit->Daughter(0)->GetFit();

Or more specific if I do:

```
PndKinVtxFitter vtxfitter(etac_vtx[j]);
vtxfitter.Fit();
RhoCandidate *etacfit=etac_vtx[j]->GetFit();
k1 = etacfit->Daughter(0);
```

k1 is fitted or not?

Dima

Subject: Re: PndKinVtxFitter. Does FitAll() work?
Posted by Ralf Kliemt on Fri, 28 Mar 2014 14:29:49 GMT
View Forum Message <> Reply to Message

Dima Melnychuk wrote on Fri, 28 March 2014 15:20

```
PndKinVtxFitter vtxfitter(etac_vtx[j]);
vtxfitter.Fit();
RhoCandidate *etacfit=etac_vtx[j]->GetFit();
k1 = etacfit->Daughter(0);
```

k1 is fitted or not?

k1 is fitted.

To understand this concept: The decay tree is copied internally. The fitted tree can be accessed via one call of GetFit(). Then you navigate in the fitted tree via Mother/Daughters relations.

Cheers
Ralf
