Subject: Vertex and kinematic fitter for full simulation.
Posted by donghee on Tue, 08 Apr 2014 11:52:25 GMT

Hi Ralf,

Now I am trying to fit for full simulation data.
PndKinFitter with mass constraint is properly working, mass distribution is clearly improved but
PndKinVtxFitter (vertex fitter) doesn't work! All entries in mass histogram are existing but
content is empty.

Could you check below code where I made mistake during the fit?
I am talking about full simulation, all spectrum without fit are surely correct.
I used mar14 and test again in scrut14. results are same for both.

Quote:
```
//Pnd Kin Vertex fitter
PndKinVtxFitter vtxfitter(dp[j]); // instantiate a vertex fitter
vtxfitter.Fit();
double chi2_vtx = vtxfitter.GetChi2(); // access chi2 of fit
double prob_vtx = vtxfitter.GetProb(); // access probability of fit
RhoCandidate *dpfit_vtx = dp[j]->GetFit(); // access the fitted cand
TVector3 Vtx_kin=dpfit_vtx->Pos();  // and the decay vertex position

hdp_fit_mass_vtx_all->Fill( dpfit_vtx->M() );
if (fAnalysis->McTruthMatch(dp[j]))
{
   hdp_fit_mass_vtx_ftm->Fill( dpfit_vtx->M() );
}

//Pnd Kin Mass Fitter
PndKinFitter mfitter(dp[j]);        // instantiate the kin fitter in psi(2S)
mfitter.AddMassConstraint(DpmMass);     // set 4 constraint
mfitter.Fit();              // do fit
double chi2_m = mfitter.GetChi2(); // get chi2 of fit
double prob_m = mfitter.GetProb(); // access probability of fit
RhoCandidate *dpfit_mass = dp[j]->GetFit(); // get fitted J/psi
 hdp_fit_mass_mass_all->Fill( dpfit_mass->M() );
if (fAnalysis->McTruthMatch(dp[j]))
{
   hdp_fit_mass_mass_ftm->Fill( dpfit_mass->M() );
}
```

Thank you in advance...
Yours,
donghee

Subject: Re: Vertex and kinematic fitter for full simulation.

Posted by Elisabetta Prencipe (2) on Tue, 08 Apr 2014 12:43:23 GMT

Hi Donghee,

 actually for me the PndKinVetxFitter runs, but I am not using the release (-->trunk24275) either for full- and fast-simulation. I get a non-correct distribution for the chi2_prob.
I make use of a code similar to yours, for Ds- --> K- K+ pi- in the decay ppbar ---->Ds-Ds(2536)+.
Indeed with the mass constraint fit I got always the problem: I obtain a skewed-gaussian distribution, not a spike on the nominal mass.
Is maybe somebody working and take a look to that?

cheers, Elisabetta

Subject: Re: Vertex and kinematic fitter for full simulation.
Posted by donghee on Tue, 08 Apr 2014 13:18:22 GMT

Hi Elisabetta,

Thank you for your kind information.
For mass constrain fit I observe also a skewed-gaussian distribution.

I think that I need to use trunk version to avoid this problem.
Now the fitter in the analysis tools are slightly wired and cannot control easily.
Maybe Ralf can clarify or indicate correct way to us.

Best wishes,
Donghee

Subject: Re: Vertex and kinematic fitter for full simulation.
Posted by donghee on Tue, 08 Apr 2014 14:17:04 GMT

Dear Ralf,

I have a trouble to work with PndKinVtxFitter.
At least mar14, scrut14, trunk all three of them have same problem.

If I made some mistake for analysis coding inside code, then I should have same error with PndKinFitter, but PndKinFitter is working correctly.

I am currently using task based analysis code with PndScrutAnaTask.cxx.
I assume that compiled analysis code should have same behaviour, I observed same problem in our online software trigger analysis.
POCA vertex was working correctly, but result of PndVtxPRG fitter was simply empty, no crash at all.

Somewhere vertex fitted informations are lost.

Currently POCA and PndKinFitter is fine, but trouble with all vertex fitter.

Best wishes,
Donghee

Subject: Re: Vertex and kinematic fitter for full simulation.
Posted by donghee on Tue, 08 Apr 2014 15:07:39 GMT
View Forum Message <> Reply to Message

Hi Ralf,

I found a bug for "task" analysis.

An analysis script as like ana_jpsi.C in macro/scrut or tutorial/rho/tut_ana_fit.C works fine.
But via task with PndTutAnaTask.cxx or PndScrutAnaTask.cxx the vertex fitter doesn't work as
I suspected.

Analysis headers for all kind of fitters are correctly included in the .cxx
However, task could not recognize vertex fitter or lost information after vertex fit procedure.

Best wishes,
Donghee

Subject: Re: Vertex and kinematic fitter for full simulation.
Posted by Ralf Kliemt on Thu, 10 Apr 2014 07:10:53 GMT
View Forum Message <> Reply to Message

Hi Donghee,

I suspect my hasty fix for the fitters is the culprit here. Please return to rev. 24233 for the rho
folder until I find a time slot for this issue. Worst case will be that I can attend to this after
easter.

pandaroot_trunk/> svn update -r 24233 rho/

Ralf