Subject: Vertex fitter(s) and B field setting in pandaroot release.
Posted by Elisabetta Prencipe (2) on Fri, 06 Feb 2015 09:54:04 GMT
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Dear all,

I found a tricky problem with the PndKinVtFitter, when I submitted my jobs to the Prometheus queues (I am using the release /oct14; but the same problem occured with /scrut14). What happens is that the chi2 values of the fit is always 0 (unreasonably) and the prob_chi2 is a plot not filled at all. Indeed, I never experienced this problem when running interactively my jobs, on my pc, in the same release. The problem, actually, is not the fitter; but the B field setting, which is different in /macro/run/ana*.C, compared to /macro/prod/prod_ana.C. In fact, when I run interactively my jobs for a test, using /macro/run/ana_complete.C, I see:

```
RhoCalculationTools::ForceConstantBz(20.0);
```

while in /macro/prod/prod_ana.C (the one that is suggested for a job submission to the queues), I see:

```
//--------------------Create and Set the Field(s)----------
PndMultiField *fField= new PndMultiField("FULL");
fRun->SetField(fField);

//RhoCalculationTools::ForceConstantBz(20.0);
```

Can anyobody explain why the B field setting is different in those 2 analysis macro, and what is the correct B field setting to use?

Other question: how/why the PndKinVtxFitter is affected from the B field setting change?

I found also that if I try to use the 4C fitter (e.g. PndKinFitter fitter(mylist[j]); fitter.Add4MomConstraint(ini) ; ), the chi2 and prob plots are filled, but with unreasonable values ( e.g. chi2 is always >10 0000; almost all entries of prob_chi2 are cented in 0) . This is something that I cannot understand. Any feedback is more than welcome!

One more thing: in /macro/prod/prod_sim.C, the B field setting is: "FULL"

```
//--------------------Create and Set the Field(s)----------
PndMultiField *fField= new PndMultiField("FULL");
fRun->SetField(fField);
```

while in /macro/run/sim_complete.C, the B field setting is: "AUTO"

```
//--------------------Create and Set the Field(s)----------
PndMultiField *fField= new PndMultiField("AUTO");
fRun->SetField(fField);
```

What is the official reccommendation for running analysis simulations?

Thank you in advance for your useful suggestions and help,

Elisabetta