Subject: Re: Psi3770 study with run981 tpc mode
Posted by StefanoSpataro on Thu, 21 Jul 2011 08:14:56 GMT
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Hi,

Donghee Kang wrote on Wed, 20 July 2011 15:01Hi,

I'm now testing latest production of psi3770 at Gridka.

For the nth time, you are not using gridka, you are using our pandagrid (I suppose).

Quote:
The data corresponds to run981 with tpc mode and just look 84500 events from totally produced 0.1M evt. PndKinVtxFitter failed and cannot go through whole 500 events.

What do you mean by "failed"? Has it crashed, or simply not produced good results?

Quote:
E/p < 0.85 due to electron tracks (Energy from EMC info.)

You don't have electron tracks in the data sample, then you can take out this selection which decreases the efficiency. Once you used ideal pid you use mc to select your particles.

Quote:
Rejects bad reconstructed track with checking GetMicroCandidate().GetChiSquared() == -1 in the track lists.

These are tracks with problem in the kalman, but maybe they are not bad reconstructed, I would use them.

Quote:
In D_mass.gif, you can find D_mass distribution with three different categories.
First column is raw D+ and D- distribution, and second column shows D+ and D- mass distributions after applying a PndKinVtxFitter.

How are you calculating prob(chi2)?

Quote:
The mean position of D+ and D- masses are slightly shifted from norminal position.

Have you fitted the peak? How much is the center and the sigma?

Quote:
The resolution of D+ and D- vertex are shown in Resolution.gif.

In order to get precise vertex resolution, one need to apply sidebin subtraction for signal region, because bg+sig cannot be separated.

If you use mc pid you don't have physical background but only the one from reconstruction tails. You should not take out such bg.

Quote:
I have still 0.13 cm resolution for x, y direction.
Even if I take only MC true matched events, the resolution doesn't change so much.

I have not yet checked vertex resolution fir psi, for for eta_c it is on the order of 100ub.

Quote:
Psi_distribution.gif shows psi3770 reconstruction with using signal region of D+ and D- mass. Here once again vertex fits for psi3770 have been applied in second, and in third coloumn psi3770 with MC true matched events are additionally plotted to get the feeling for estimation of Psi3770 efficiency.

Have you tried with stt? I have a much higher efficiency there.

Quote:
When I required the MC true matching to reconstructed track, some events have double or even more counting at MC true matching, since sometimes two or three reconstructed tracks are induced essencially same origin of one MC track.
If I have those event, I throw away those events. I need still some tests to reduce those multi-counting problem in my analysis.

You should not reject nthose events, but simply take the best cadidate, with momentum closer to the mc one. This would save you a lot of tracks.

Quote:
PID would be real solution.

You have already mc pid, then you have already the solution

Quote:
So, efficiency of Psi3770 is extremely low with this approach.
If I try same analysis with 4CFitter, I couldn't achieve until finishing complete analysis with 500 events, simply run crash with 4Cfitter for psi3770.

Maybe you have some bug in your code. I was able to run both the fitters with eta_c and w/o any problems/crash. Maybe you have some problems with indices.

Good luck!