Subject: Modifications in Kalman
Posted by StefanoSpataro on Mon, 18 Mar 2013 16:49:39 GMT
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Dear all,
I have added inside the PndRecoKalmanTask the possibility to switch ON/OFF the back propagation of the track parameters from the first point of the track to the Interaction Point (at present this is done always), before the fit.

This can be done in the reco macro, with the function:

PndRecoKalmanTask::SetPropagateToIP(kTRUE/kFALSE);

This can be useful for the FTS tracking standalone.
it would be interesting to study the difference in performances with and without the backpropagation.

Subject: Re: Modifications in Kalman
Posted by StefanoSpataro on Tue, 19 Mar 2013 09:40:40 GMT
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Hi,
I have also added the possibility to use as initial detector plane for the kalman the plane perpendicular to the track, instead of the old vertical plane XY.
This can be switched with the function:

PndRecoKalmanTask::SetPerpPlane(kTRUE/kFALSE);

I have not changed the default settings of these two new options. This means that all the reco macros will work in the same way as before, if you don't add the function calls.

Subject: Re: Modifications in Kalman
Posted by StefanoSpataro on Tue, 19 Mar 2013 12:52:58 GMT
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Hi,
I checked the differences for momentum recosntructions, using 10k muons at 0.5 GeV/c in the barrel.

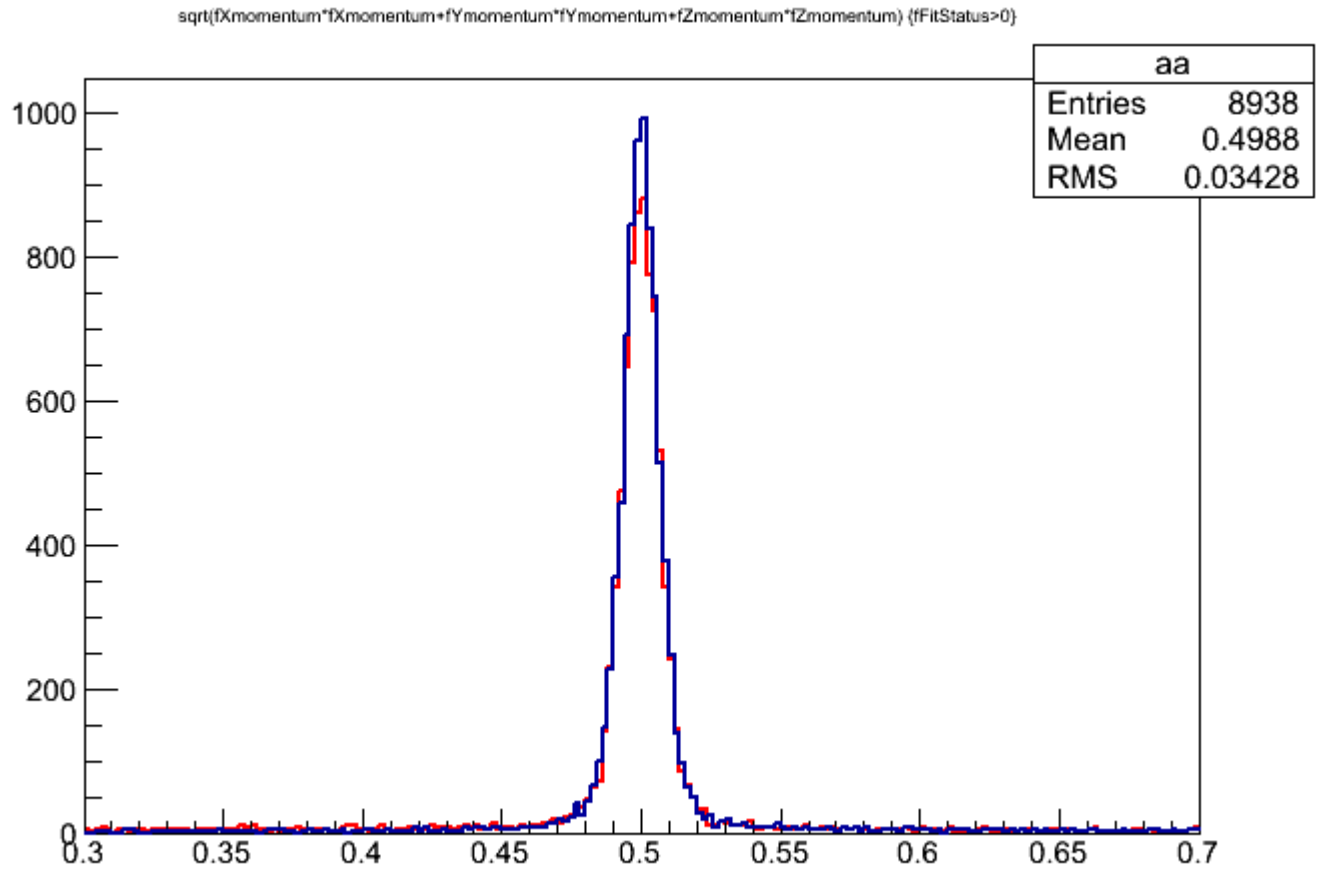
This the comparison w/ (blue) and w/o (red) backward propagation to the IP:

This the comparison with the standard initial plabe (blue) and with the perpendicular plane (red)

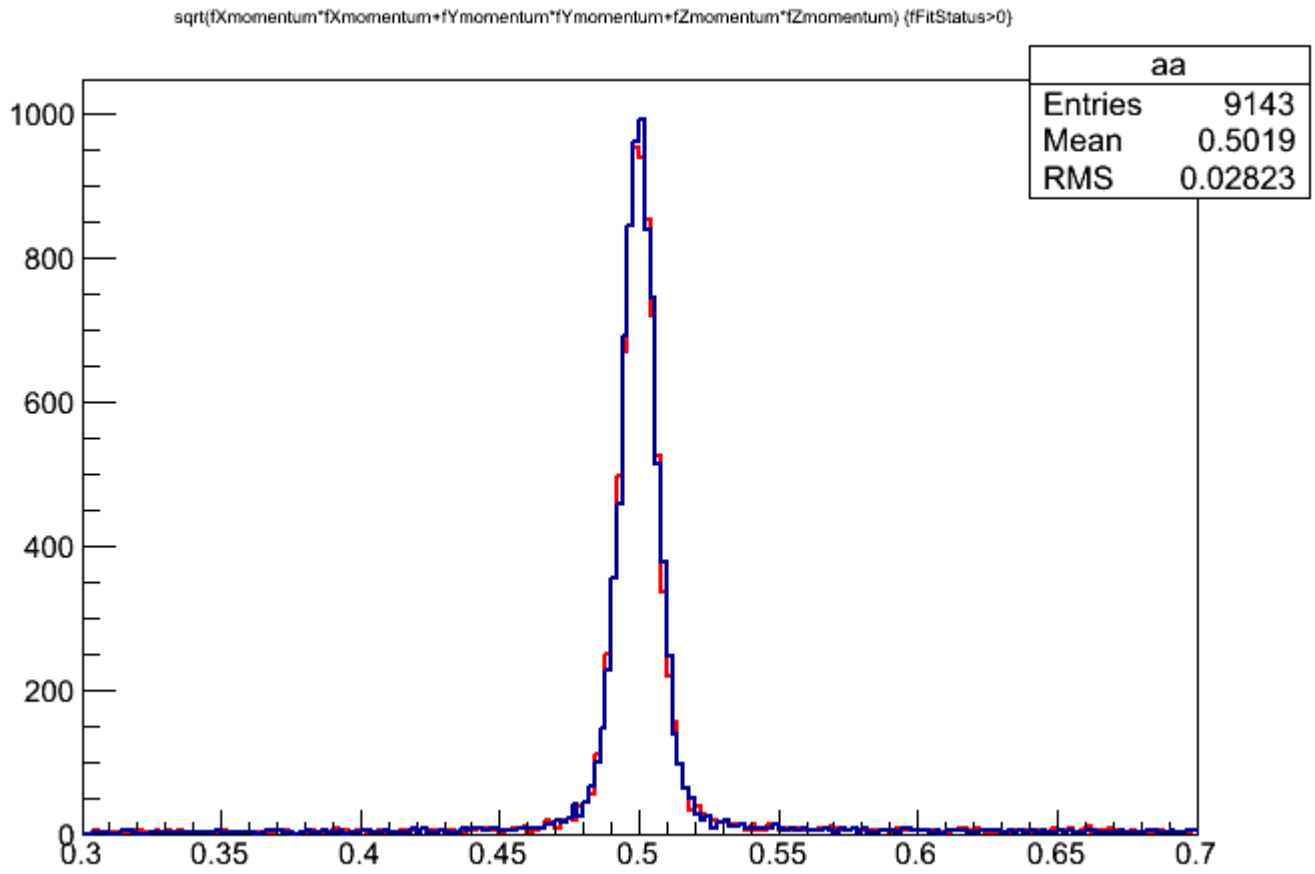
It appears evident that the orientation of the plane does not affect teh results, while w/o back propagation the counts are less. The latter point is not well understood by me.

File Attachments

1) res_ip.gif, downloaded 1334 times



2) res_perp.gif, downloaded 1292 times


sqrt(fXmomentum*fXmomentum+fYmomentum*fYmomentum+fZmomentum*fZmomentum) {fFitStatus>0}
aa
Entries 9143
Mean 0.5019
RMS 0.02823
1000
800
600
400
200
0
0.3
0.35
0.4
0.45
0.5
0.55
0.6
0.65
0.7