Subject: Macros for Mvd+Stt Pattern Recognition
Posted by Gianluigi Boca on Mon, 06 Dec 2010 22:26:40 GMT
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hallo,
you can find in the new directory

$VMCWORKDIR/macro/sttmvdtracking

three macros for generating, digitizing and reconstructing events.

In particular in runreco.C you can find the Task for Pattenr Recognition with Mvd + Stt

In short time runreco.C will be expanded to include also the Kalman filter track fitting.

Please try it and report any problems you may encounter

Gianluigi

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by StefanoSpataro on Tue, 07 Dec 2010 14:13:01 GMT
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Is there some reason to use straws_skewed_blocks_pipe_120cm.geo instead of straws_skewed_blocks_35cm_pipe.geo ? I supposed the latter is the default one.

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by StefanoSpataro on Tue, 07 Dec 2010 15:52:53 GMT
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Now sttcombi macros in macro/pid folder are updated using STT+MVD tracking code from Gianluigi.
It seems to work, also the kalman and the pid correlation

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by Gianluigi Boca on Wed, 08 Dec 2010 13:54:38 GMT
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Stefano Spataro wrote on Tue, 07 December 2010 15:13Is there some reason to use straws_skewed_blocks_pipe_120cm.geo instead of straws_skewed_blocks_35cm_pipe.geo ? I supposed the latter is the default one.

Form the mechanical point of view, the 120 cm geometry is favoured by the Julich people. From the STT+GEM detector performance point of view it is not still clear, there pro's and con's.

So, what do you suggest Stefano ? Would the usage of the 120 cm geometry be a problem of consistency with result obtained in the past ?

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by Gianluigi Boca on Wed, 08 Dec 2010 13:58:22 GMT
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Gianluigi Boca wrote on Mon, 06 December 2010 23:26hallo,
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In particular in runreco.C you can find the Task for Pattenr Recognition with Mvd + Stt

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Please try it and report any problems you may encounter

Gianluigi

I uploaded a new veriosn of the same
$VMCWORKDIR/macro/sttmvdtracking/runreco.C
with also the Kalman filter.
Also Lia provided the Macro
$VMCWORKDIR/macro/sttmvdtracking/checkmomentum.C
to plot the reconstructed momentum after the Pattern Recognition but BEFORE the reconstructed momentum after the Kalman filter.

Gianluigi
Kalman filter and the

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by Ralf Kliemt on Fri, 10 Dec 2010 08:53:06 GMT
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Hello.

Trying to use the new PR I get for the Kalman fit status flag always -1.
With Lhe I have a nice mix of 1, -1 & -2.
What is going on?

Ralf.

Subject: Re: Macros for Mvd+Stt Pattern Recognition

Posted by StefanoSpataro on Fri, 10 Dec 2010 09:45:16 GMT
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Hi,
Tobias has changed in some part of the code the way to access to detector ID in the PndTrackCand.
Before, the detId was taken from the enum in PndDetectorList -> kMVDStripPixel.

With the new changes the detector ID is the branch ID of the corresponding TClonesArray, i.e.:

FairRootManager::Instance()->GetBranchId("MVDStripPixel")

As far as I have checked, the code was changed in lhetrack, pid and recotasks. Probably there is still some unchanged part of the code in Stt and maybe also in other tracking classes.

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by Lia Lavezzi on Fri, 10 Dec 2010 10:24:13 GMT
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Hallo Ralf,
  please use an older revision for the moment. I think r10451 should be fine. In the meantime we are working to make the stt code compatible with the new way of getting the detID. It shouldn' t take too long.
Cheers,
Lia.

Update: sorry, 10451 is not old enough, it has to be older than 10446. But keep the newest macro/pid macros for stt in order to use the stt + mvd PR!

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by Gianluigi Boca on Fri, 10 Dec 2010 14:01:37 GMT
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Ralf Kliemt wrote on Fri, 10 December 2010 09:53Hello.

Trying to use the new PR I get for the Kalman fit status flag always -1.
With Lhe I have a nice mix of 1, -1 & -2.
What is going on?

Ralf.

Hallo Ralf,
I have just put the new version of the STT and STT+MVD PR code. All
the hit enumerators have been substituted, so I believe the Macros run now.

Tschuess Gianluigi

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by Ralf Kliemt on Mon, 13 Dec 2010 16:00:22 GMT
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Hi Gianluigi,

I windered why the Real PR for STT needs the Monte-Carlo Point array. Diving deeper I found that in PndSttTrackfinderReal::DoFind() (~line 475) you abort the PR for fake hits, because you cannot add a proper reference. Could you remove these restrictions, giving a plain -1 as reference?

Regards.
Ralf

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by Gianluigi Boca on Wed, 15 Dec 2010 21:09:15 GMT
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Ralf Kliemt wrote on Mon, 13 December 2010 17:00Hi Gianluigi,

I windered why the Real PR for STT needs the Monte-Carlo Point array. Diving deeper I found that in PndSttTrackfinderReal::DoFind() (~line 475) you abort the PR for fake hits, because you cannot add a proper reference. Could you remove these restrictions, giving a plain -1 as reference?

Regards.
Ralf

Hi Ralf,
done ! Now the noise hits or anyway hits not belonging to any MC track are included in the STT Pattern Recognition. The number that usually connects a Hit to a MC track in my code now is set at -20.
Notice though that in the STT at any Hit it corresponds a MC Track since the noise hasn't been implemented yet.
So the PR results should be unchanged.

The new PndSttTrackFinderReal.cxx and PndSttMvdTracking.cxx
are in the repository.

Gianluigi

Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by StefanoSpataro on Thu, 16 Dec 2010 09:02:41 GMT
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Hi Gianluigi,
I have run the full sim chain in macro/pid, simulating 10k events with DPM to check the stability.

Everything is fine up to the stt pattern recognition (PndSttTrackFinderReal).
Once I add PndSttMvdTracking I have the system hanging on a well defined event (7434) for hours and then closing the root.
I have tried two times with the same effect.

This is the last message I got:

Found Tracks: 0 in event no. 7431

Found Tracks: 0 in event no. 7432

Found Tracks: 0 in event no. 7433

Warning: numerical instability (primal simplex, phase II)
Found Tracks: 0 in event no. 7434
----
something fishy is going on in PndSttTrkAssociatedParallelHitsToHelixQuater!Range in Fi (rad) is 3.454
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Subject: Re: Macros for Mvd+Stt Pattern Recognition
Posted by Gianluigi Boca on Fri, 17 Dec 2010 12:51:18 GMT
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Stefano Spataro wrote on Thu, 16 December 2010 10:02Hi Gianluigi,
I have run the full sim chain in macro/pid, simulating 10k events with DPM to check the stability.

Everything is fine up to the stt pattern recognition (PndSttTrackFinderReal).
Once I add PndSttMvdTracking I have the system hanging on a well defined event (7434) for hours and then closing the root.
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Hi Stefano,
this is only to let the collaboration know that after we discussed on the phone, and after your attempts last night, it seems clear that the hanging of the program at events 7434 is caused by a memory leak.

Instead the messages : "something fishy is going on etc.etc."
should never occur in principle.
For that purpose I sent you a modified version of
PndSttTrkAssociatedParallelHitsToHelixQuater
with some printouts added, in order to try understand this problem.
Gianluigi
