
Subject: the eta_c analysis presented yesterday by Dima
Posted by [Gianluigi Boca](#) on Tue, 02 Aug 2011 13:32:46 GMT
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Hallo,
as some of you know, yesterday at the Tracking EVO meeting Dima presented the Eta_c analysis with the STT.

This analysis was performed on his computers with the latest version of the code in svn.

The shocking news was that the efficiency for STT dropped dramatically and the quality of the reconstructed Eta_c mass was essentially crap compared to the same analysis performed about 1 month ago in the Grid.

So last night I rerun all the efficiencies studies and I reproduced again all the efficiency Table that I presented many times in the past.

This table is a list of track reconstruction efficiencies and hit finding efficiencies and spurious percentages done with Box generated events of 1, 4, 10 tracks at 0.3, 2, 5 and 10 GeV/c.

To my personal relief I noticed that nothing has changed WITH THE LATEST VERSION OF THE STT+MVD PATTERN RECOGNITION with respect to the past and all the efficiencies are at a very high level.

So I CLAIM THAT SOMETHING FISHY IS GOING ON IN THE CODE AFTER PATTERN RECOGNITION.

This of course is not Dima's fault. I invite every developer to investigate any change they may have done that affects the Eta_c results so much
thanks in advance Gianluigi

Subject: Re: the eta_c analysis presented yesterday by Dima
Posted by [Stefano Spataro](#) on Tue, 02 Aug 2011 13:44:05 GMT
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Are you sure the macros are the same of the ones in grid? I am not sure if the stt macros in svn were recently updated.

Subject: Re: the eta_c analysis presented yesterday by Dima
Posted by [Dima Melnychuk](#) on Tue, 02 Aug 2011 14:00:32 GMT
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Hi Stefano,

I compared macros I used locally for STT reconstruction with that on the grid and the only difference is latest update by Lia:

```
PndMCTrackAssociator* trackMC0 = new PndMCTrackAssociator();  
trackMC0->SetTrackInBranchName("SttMvdTrack");
```

```
trackMC0->SetTrackOutBranchName("SttMvdTrackID");
trackMC0->SetPersistence(kFALSE);
fRun->AddTask(trackMC0);
```

```
PndSttMvdGemTracking * SttMvdGemTracking = new PndSttMvdGemTracking(0);
SttMvdGemTracking->SetPdgFromMC();
fRun->AddTask(SttMvdGemTracking);
```

plus added commented line by Gianluigi
// SttMvdTracking->Cleanup();

But I already tried with this line:
SttMvdGemTracking->SetPdgFromMC();
commented and it didn't cause any difference.

And in addition I just checked STT reconstruction with commented line
recoKalman->SetIdealHyp(kTRUE);

but difference is minor.

Dima

Subject: Re: the eta_c analysis presented yesterday by Dima
Posted by [Johan Messchendorp](#) on Tue, 02 Aug 2011 14:07:08 GMT
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A question to Dima: the loss of STT efficiency appears already in the most up-to-date july11 release? Or did it occur afterwards?

Greets,

Johan.

Subject: Re: the eta_c analysis presented yesterday by Dima
Posted by [Dima Melnychuk](#) on Tue, 02 Aug 2011 14:16:33 GMT
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Hi Johan,

With grid data produced with july11 release (run 921) results are good.

The problem exists with the trunk version as of July,31.

Dima

Subject: Re: the eta_c analysis presented yesterday by Dima
Posted by [Stefano Spataro](#) on Tue, 02 Aug 2011 14:38:07 GMT

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I have not well understood. In the good macro there should be two mctrackassociator, one after the sttmvdgem task and another after the kalman. Moreover, in the kalman one should set the pndtrackid TCA name. Was this done?

Subject: Re: the eta_c analysis presented yesterday by Dima
Posted by [Dima Melnychuk](#) on Tue, 02 Aug 2011 14:46:44 GMT

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According to the latest modification done by Lia there are not 2 but 3 mctrackassociator, one before PndSttMvdGemTracking, one after and third after Kalman and all pndtrackid are properly set.

Dima

Subject: Re: the eta_c analysis presented yesterday by Dima
Posted by [Lia Lavezzi](#) on Tue, 02 Aug 2011 14:49:44 GMT

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Quote: I have not well understood. In the good macro there should be two mctrackassociator, one after the sttmvdgem task and another after the kalman. Moreover, in the kalman one should set the pndtrackid TCA name. Was this done?

I added an additional mctrackassociator before the PndSttMvdGemTracking to extrapolate with the MC pdg code.

Lia.
