
Subject: eta_c with event mixing for STT

Posted by [Dima Melnychuk](#) on Mon, 29 Aug 2011 22:35:11 GMT

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Dear colleagues,

I have analysed the eta_c data produced on the GRID with event mixing, and at the moment I still do not understand the results.

But I just want to share some plots to show the current status.

So multiplicity of charged tracks:

Only 8% of events have ≥ 4 tracks which is much lower than 72% without event mixing.

Invariant mass of phi and eta_c with preselection on phi mass window:

Here there is no indication of phi or eta_c peak.

And applying MC Truth PID does not change this distribution much.

And finally only 4 events out of 100k pass the selection cuts.

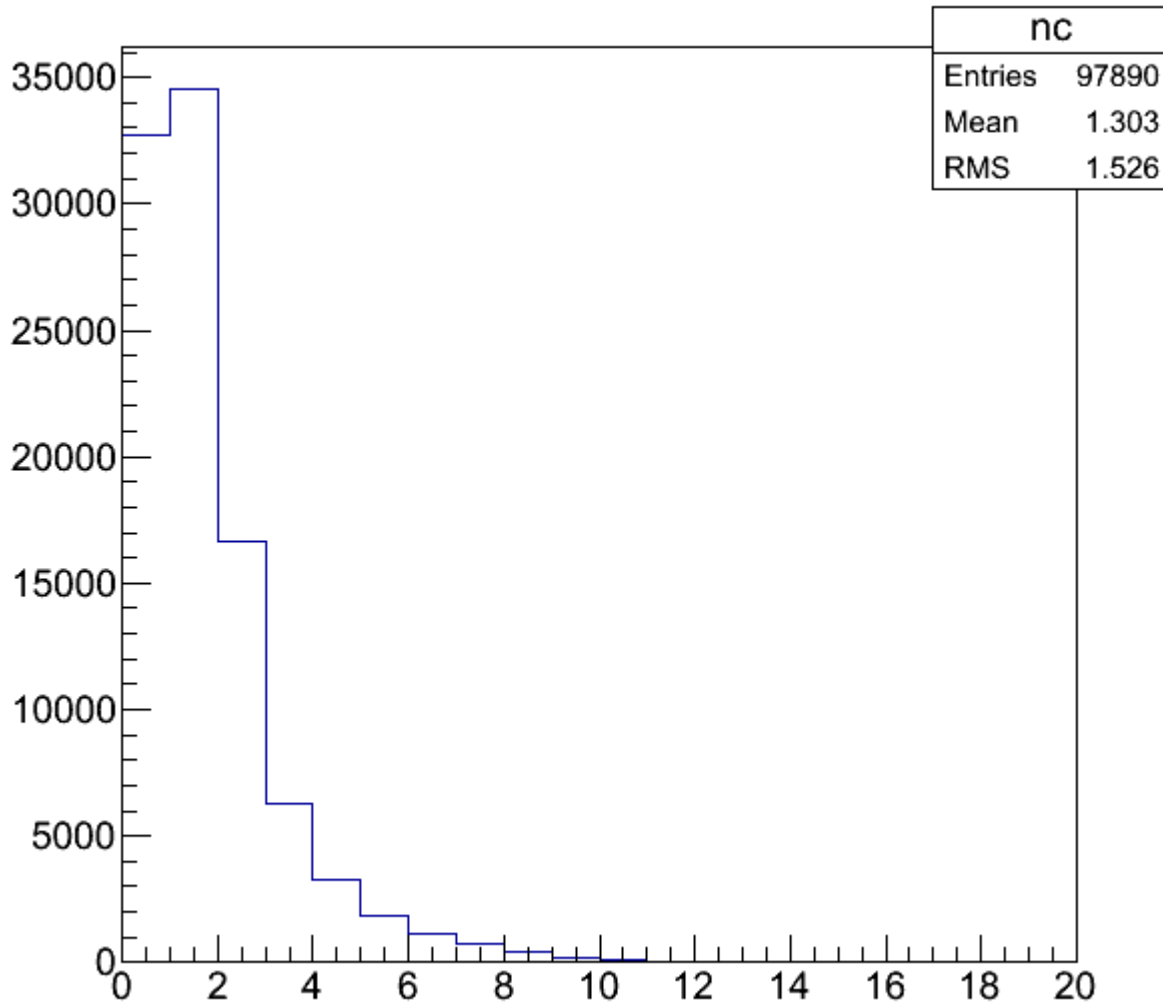
So the results still have to be understood.

Dima

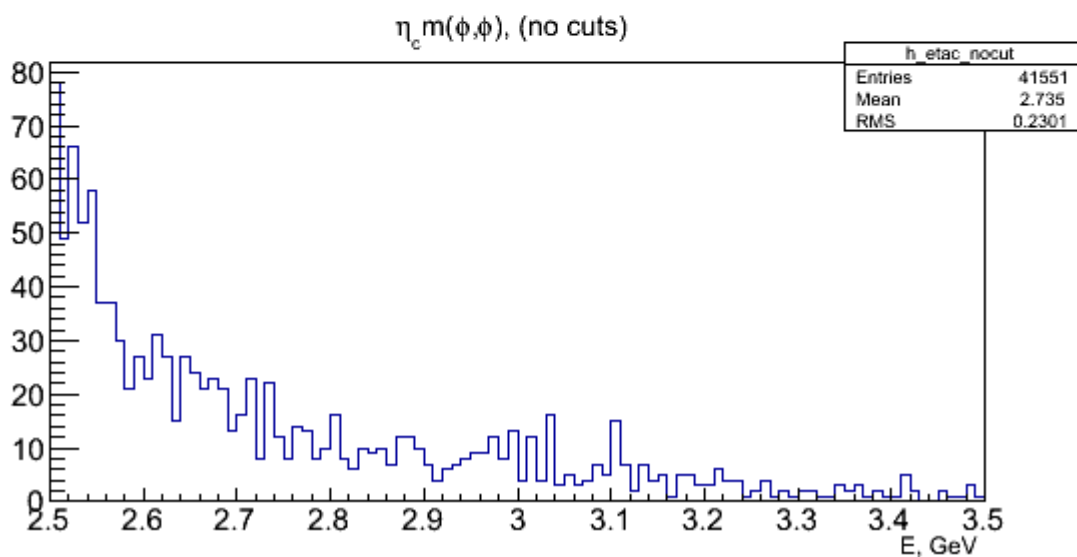
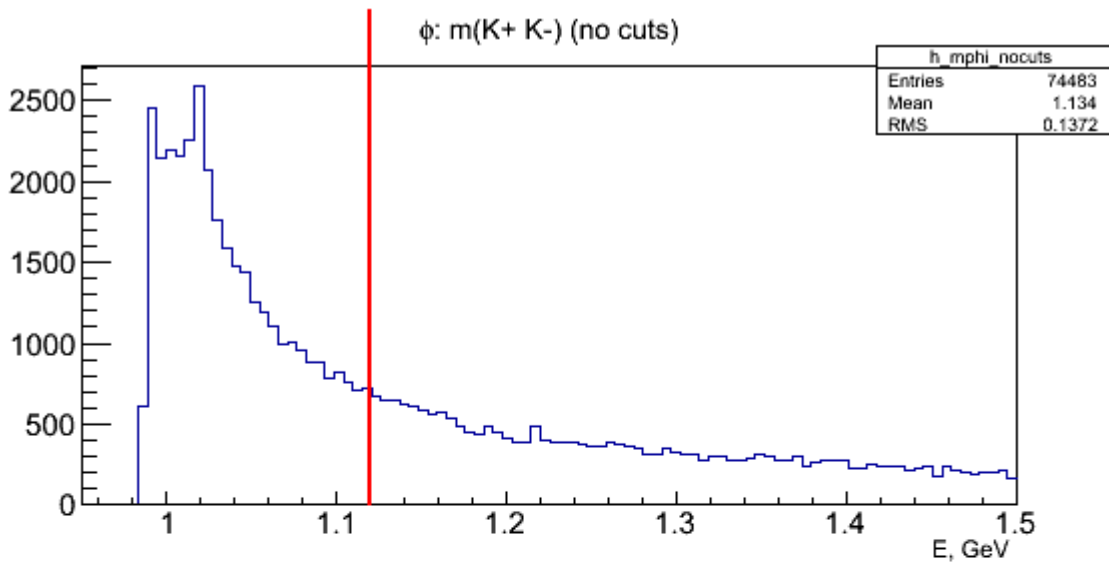
File Attachments

1) [n_charged_stt.png](#), downloaded 1265 times

n charged



2) [m_nocuts_stt.png](#), downloaded 1331 times



Subject: Re: eta_c with event mixing for STT

Posted by [Dima Melnychuk](#) on Fri, 02 Sep 2011 09:37:40 GMT

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Dear colleagues,

Here I update plots on eta_c reconstruction with STT and event mixing with runs mix301, mix311, mix321, mix331.

There is an improvement comparing to previous results but the results are still far from reasonable.

Multiplicity of charged tracks:

23% of events have ≥ 4 tracks in comparing to 8% in previous run and 72% without event mixing.

And invariant mass of phi and eta_c with preselection on phi mass window:

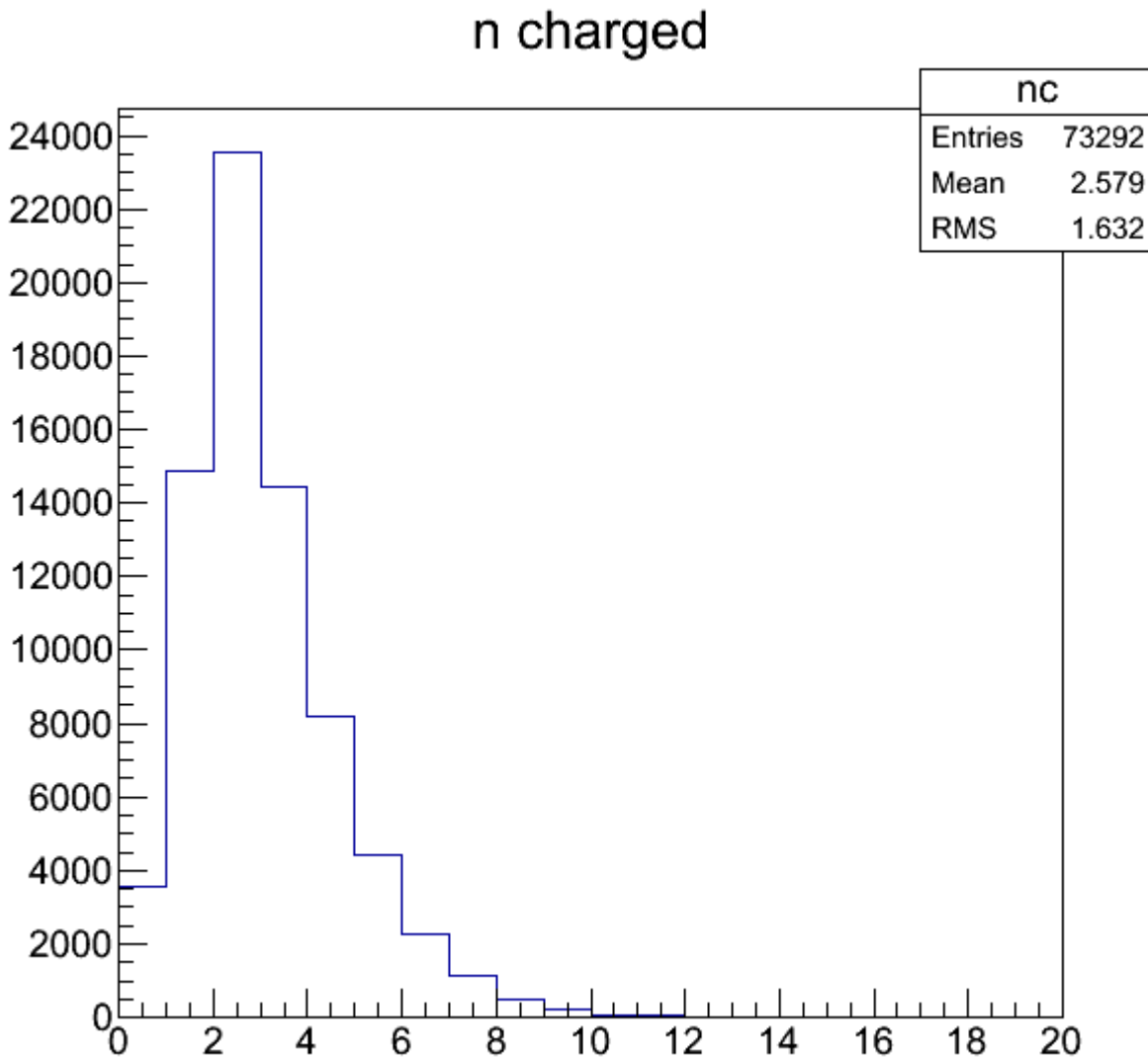
Here phi peak appears but still no indication of eta_c peak.

Finally 36 events were reconstructed from 100 k.

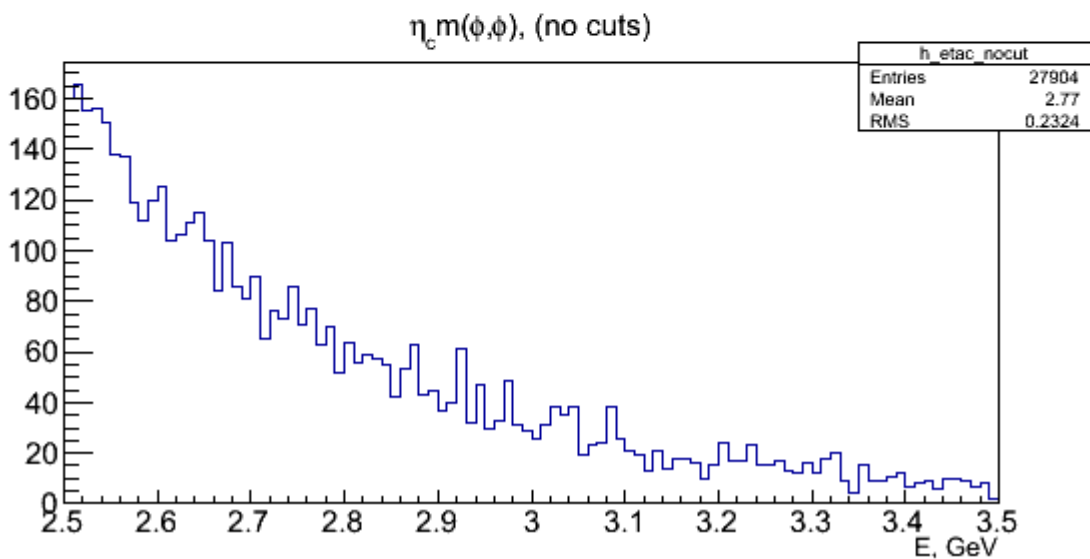
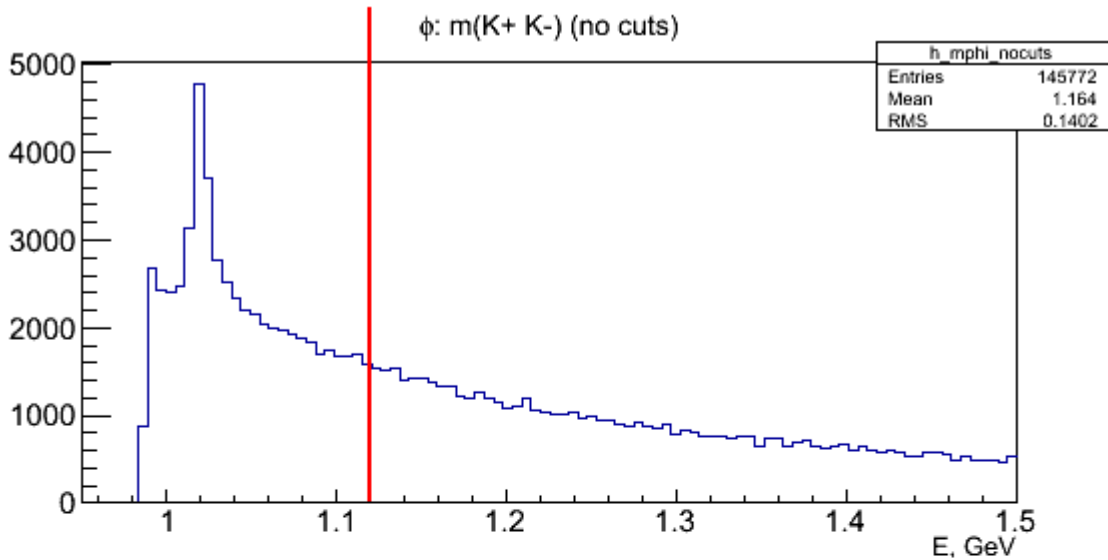
Dima

File Attachments

1) [n_charged.png](#), downloaded 1105 times



2) [m_nocuts.png](#), downloaded 1113 times



Subject: Re: eta_c with event mixing for STT
 Posted by [Dima Melnychuk](#) on Fri, 02 Sep 2011 15:26:39 GMT
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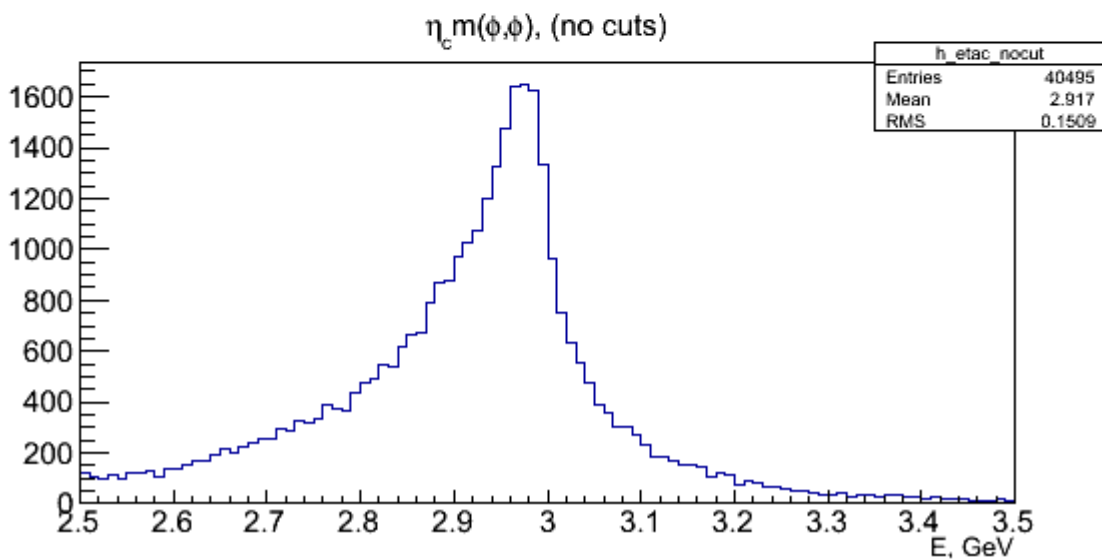
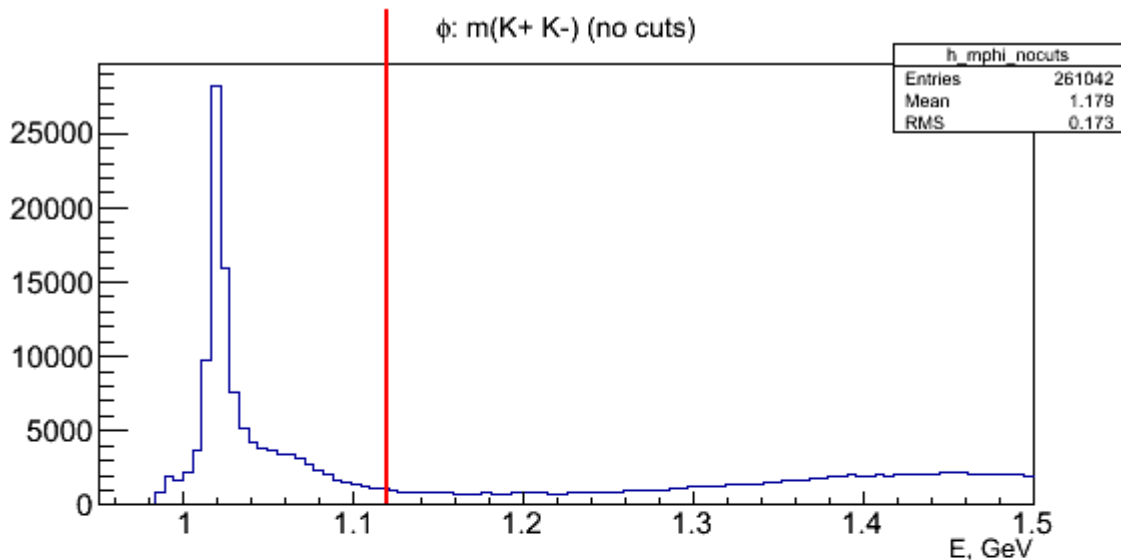
Just for comparison here I present invariant mass distributions for eta_c and phi with the same version of STT software (august11).

This run is produced with cleanup code and eta_c reconstruction efficiency is 7.8%

Dima

File Attachments

1) [m_nocuts_nomix.png](#), downloaded 937 times



Subject: Re: eta_c with event mixing for STT
 Posted by [Dima Melnychuk](#) on Thu, 08 Sep 2011 00:48:23 GMT
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Hi all,

With the latest run eta_c events produced with STT with background mixing are reconstructable.

Multiplicity of reconstructed tracks is rather high:

With rough pre-selection on phi mass invariant mass distributions looks like:

So there is small indication of eta_c peak.

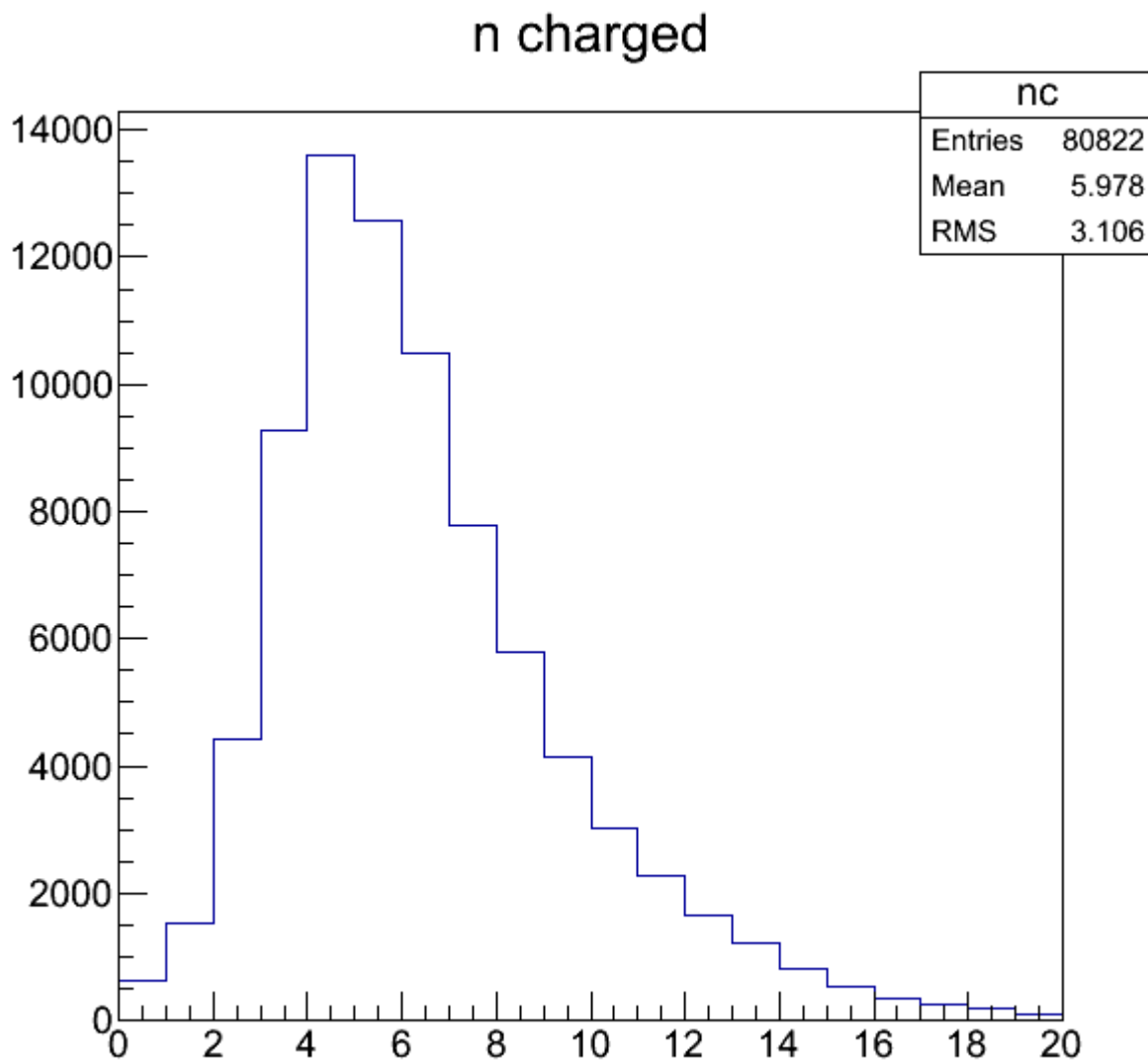
But after the final selection:

eta_c is reconstructed with efficiency 3.3%

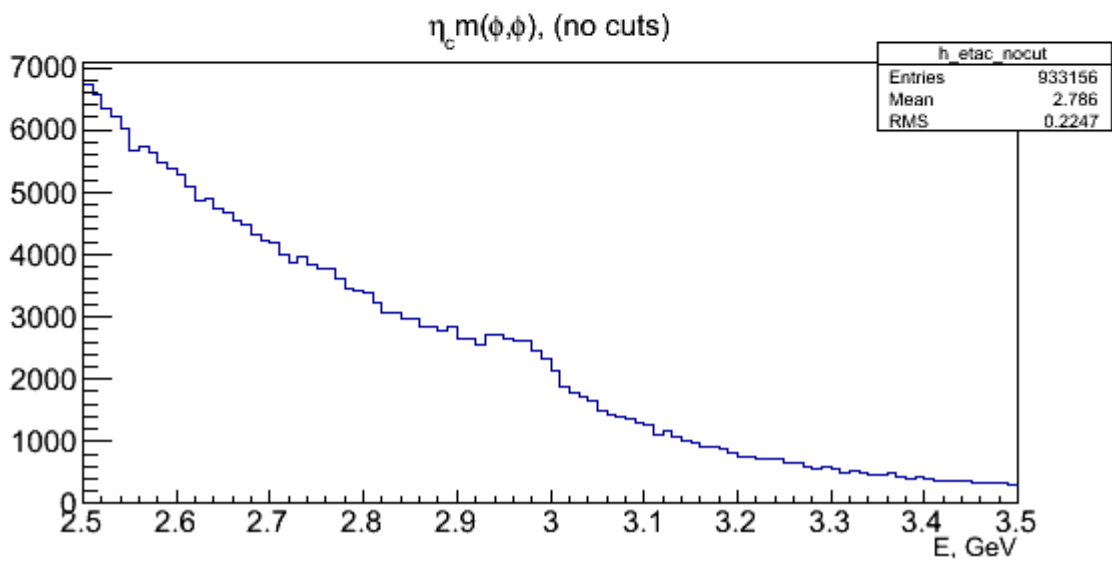
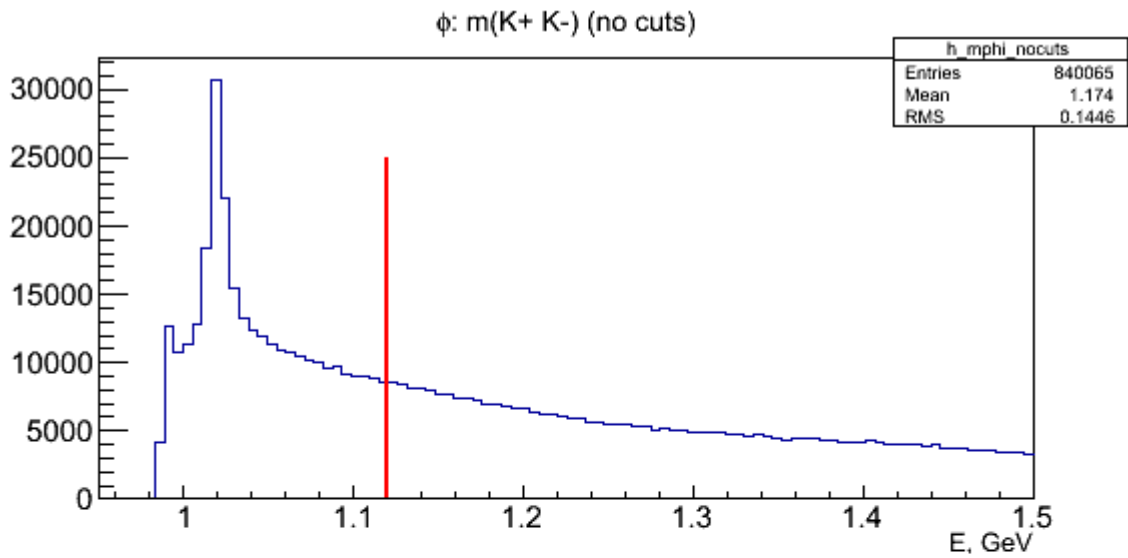
Dima

File Attachments

1) [n_charged_stt_mix.png](#), downloaded 1052 times



2) [m_nocuts_stt_mix.png](#), downloaded 1171 times



3) [m_final_vtx_stt_mix.png](#), downloaded 1140 times

