Subject: Re: Crash in PndTpcRiemannTrackingTask
Posted by Dima Melnychuk on Thu, 14 Jul 2011 08:25:34 GMT
View Forum Message <> Reply to Message

Hi,

I checked TPC performance for eta_c reconstruction after latest update of PndTpcRiemannTrackingTask.

I used kaon hypothesis in tpc reconstruction macro

```
tpcSPR->SetPDG(321);
tpcSPR->SetMCPid(false);
```

and eta_c peak appeared back but efficiency is still low in comparison with STT (5.4-5.9% for TPC vs 20-29% for STT).

So with 2000 events multiplicity of charged tracks:

And maximum efficiency we can expect is 54%.

Mass distribution for phi and eta_c (using 4C-fit) efficiency - 5.9%

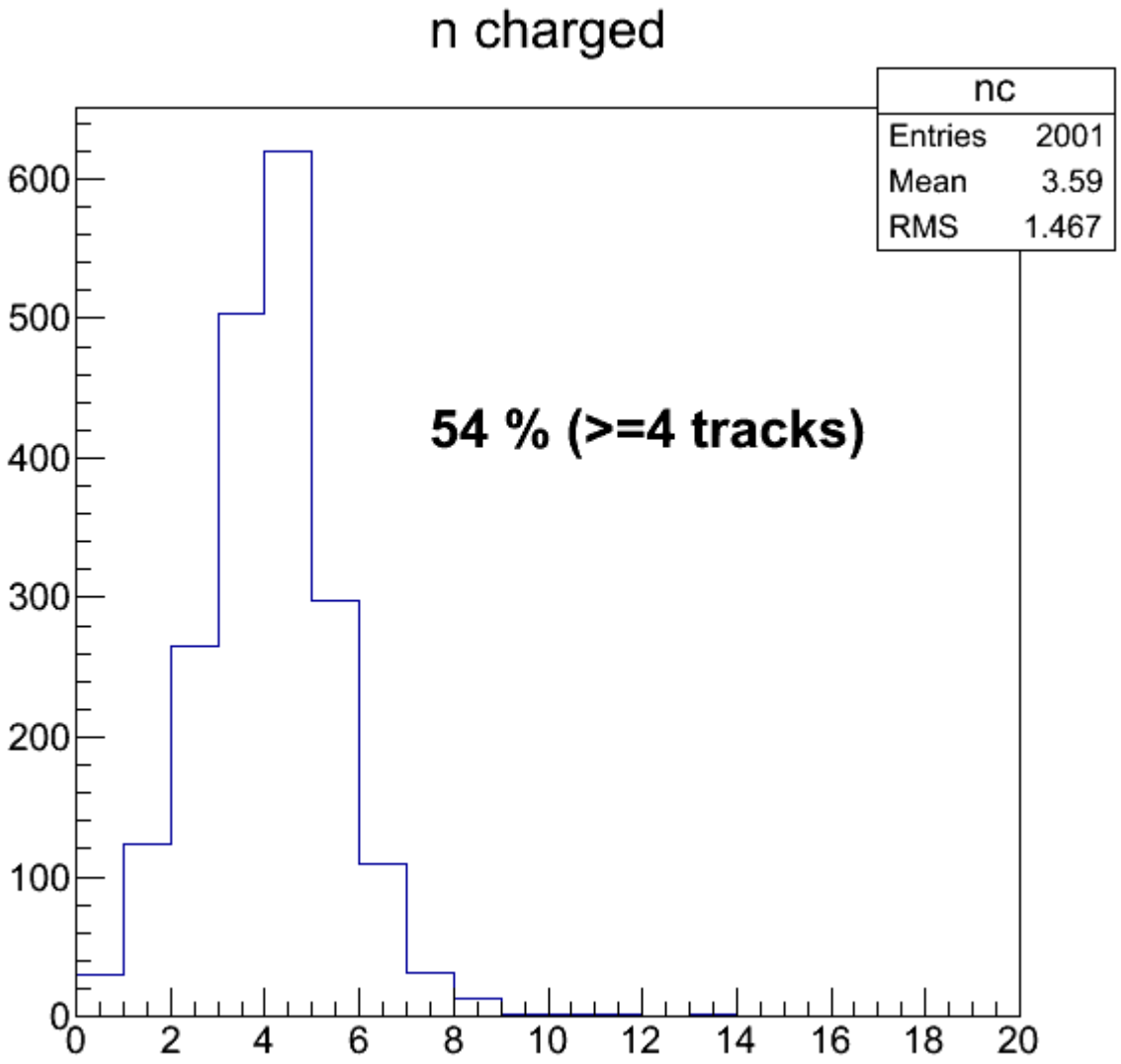
Mass distribution for phi and eta_c (using vertex fit) efficiency - 5.4%

Efficiencies in principle depend on cuts on chi2 of the fit and can be increased, but the 4-times difference between TPC and STT is with the same cuts.

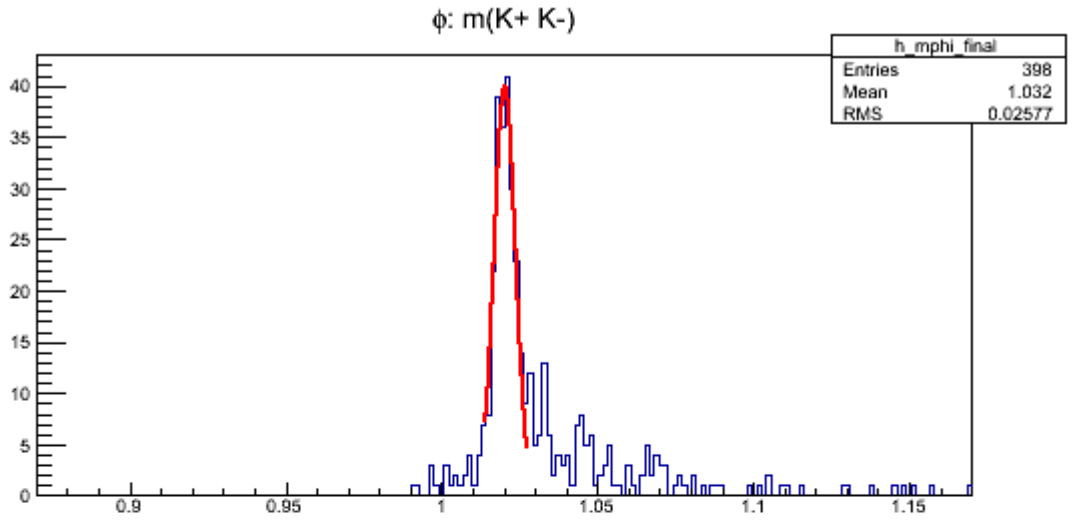
Dima

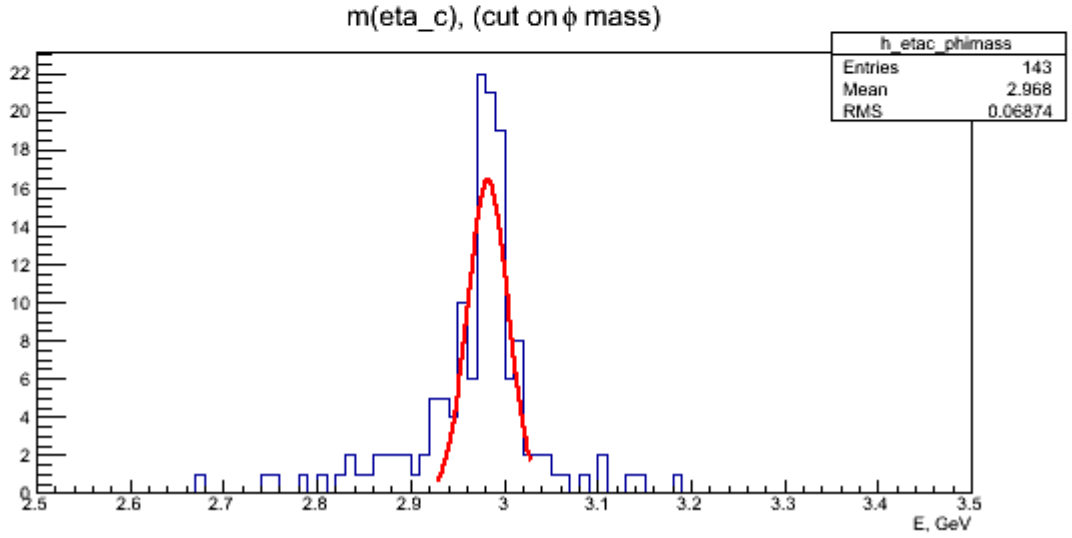
File Attachments

1) n_charged_tpc.png, downloaded 797 times

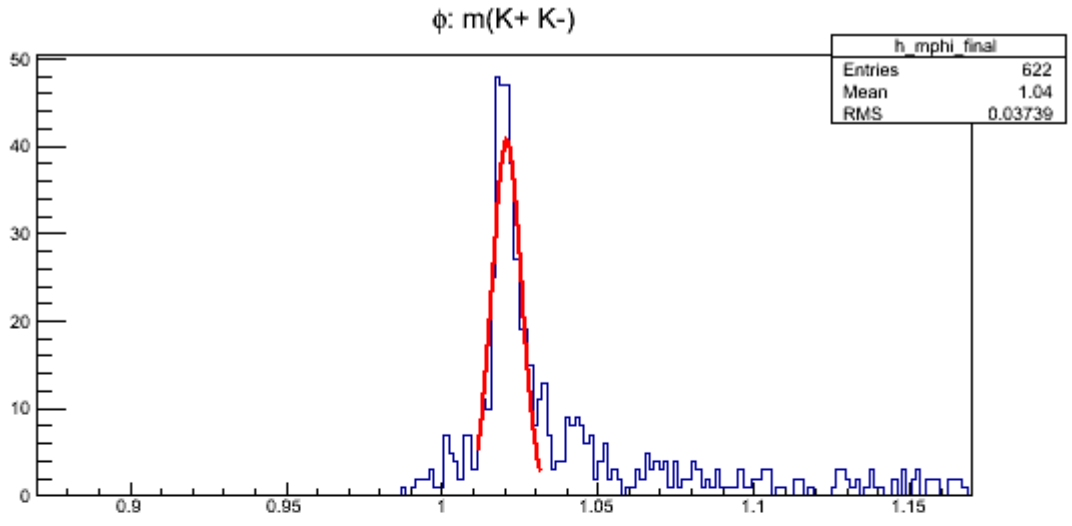


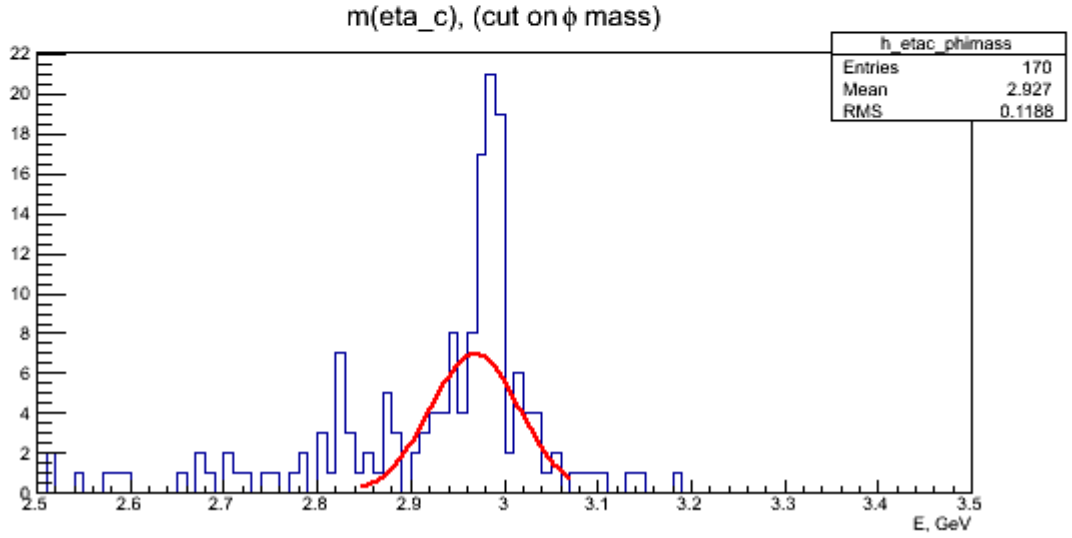
2) m_etac_tpc.png, downloaded 782 times





3) m_etac_tpc_vtx.png, downloaded 739 times


ϕ: m(K+ K-)
h_mphi_final
Entries 622
Mean 1.04
RMS 0.03739
50
40
30
20
10
0
0.9
0.95
1
1.05
1.1
1.15


m(eta_c), (cut on ϕ mass)
h_etac_phimass
Entries 170
Mean 2.927
RMS 0.1188
22
20
18
16
14
12
10
8
6
4
2
0
2.5
2.6
2.7
2.8
2.9
3
3.1
3.2
3.3
3.4
3.5
E, GeV