Subject: Re: Crash in PndTpcRiemannTrackingTask
Posted by Dima Melnychuk on Thu, 14 Jul 2011 08:25:34 GMT

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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%

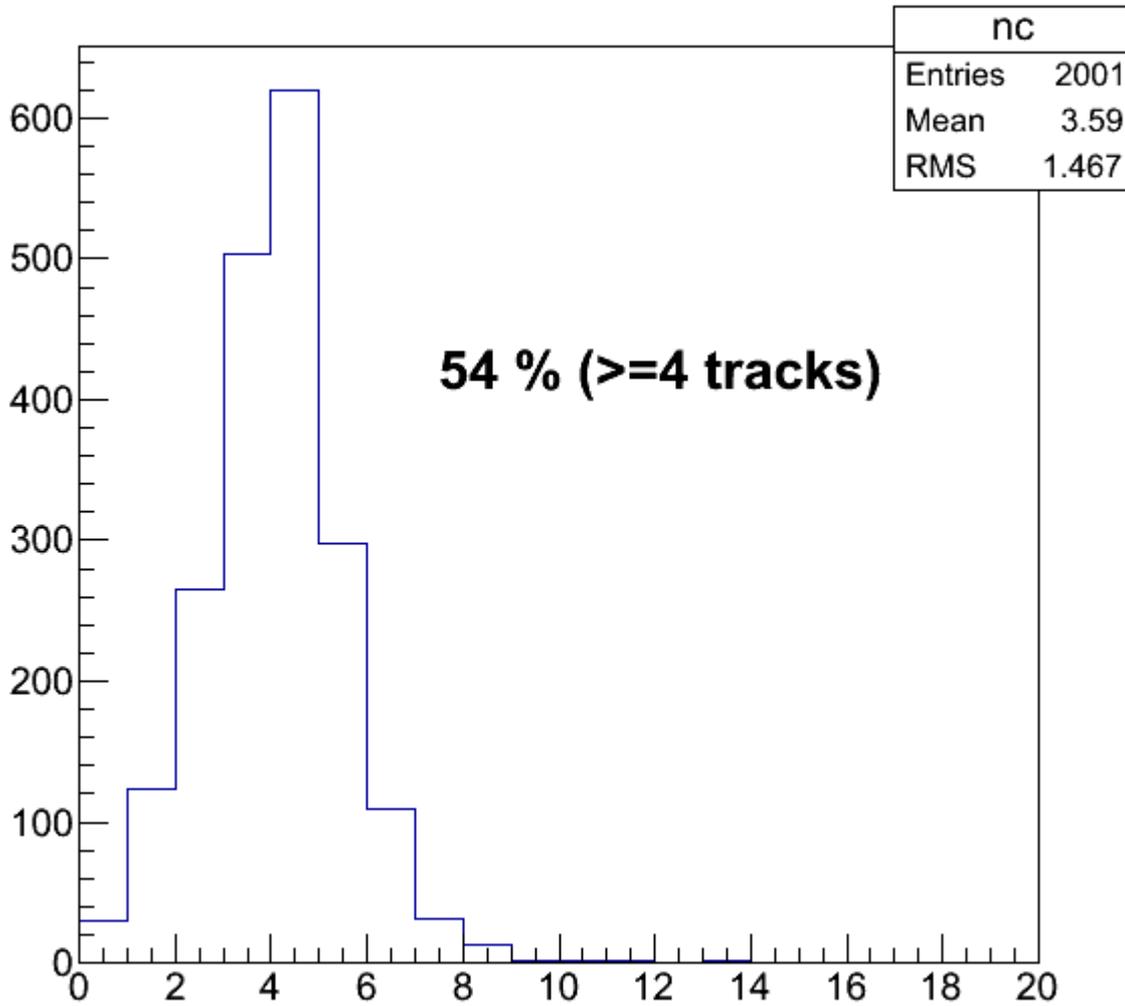Mass distribution for phi and eta_c (using vertex fit) efficiency - 5.4%

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.
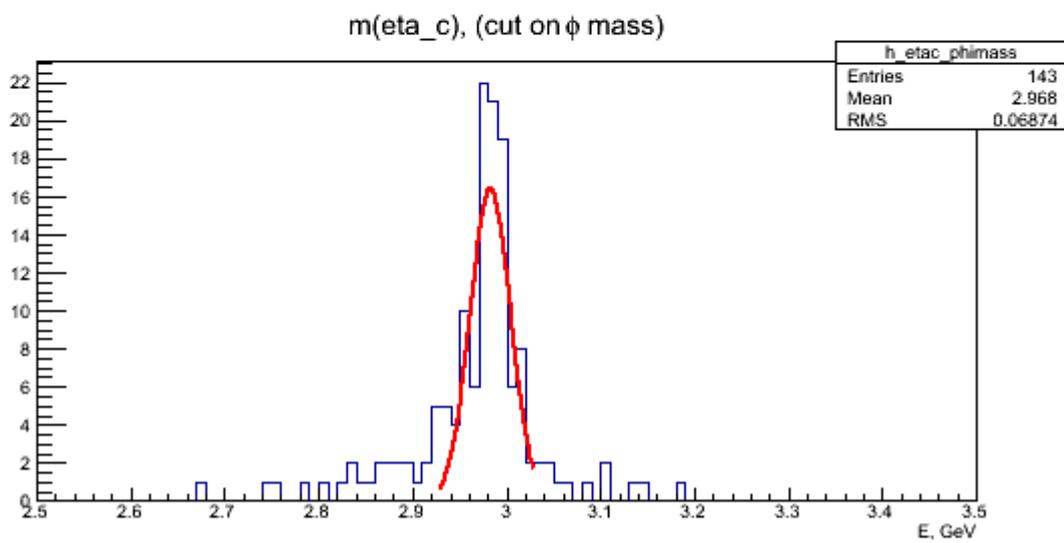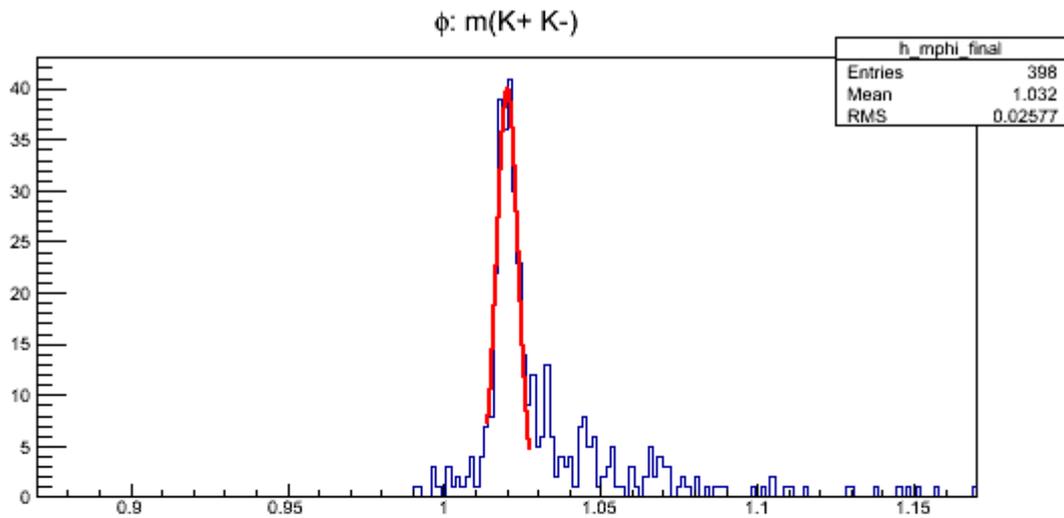
Dima

File Attachments
1) n_charged_tpc.png, downloaded 1095 times

n charged

nc	
Entries	2001
Mean	3.59
RMS	1.467

54 % (>=4 tracks)

2) m_etac_tpc.png, downloaded 1173 times

φ: m(K+ K-)

h_mphi_final	
Entries	398
Mean	1.032
RMS	0.02577

m(eta_c), (cut on φ mass)

h_etac_phimass	
Entries	143
Mean	2.968
RMS	0.06874

E, GeV

3) m_etac_tpc_vtx.png, downloaded 1136 times

φ: m(K+ K-)

h_mphi_final	
Entries	622
Mean	1.04
RMS	0.03739

m(eta_c), (cut on φ mass)

h_etac_phimass	
Entries	170
Mean	2.927
RMS	0.1188

E, GeV