

Hi,

With available "mixed data" 391 subjobs by 250 events, i.e. around 100 k I have the following results for eta_c reconstruction.

Starting with multiplicity of reconstructed tracks, it's obviously higher than for signal only.

Invariant mass for eta_c and phi without cuts.

Here eta_c peak seats on large combinatorial background.

After all the cuts mass looks like:

Efficiency of eta_c reconstruction 11.6% vs 27.3% for signal only and 19.1% for signal plus clean-up. Resolution $\sigma(\eta_c)=18.6$ MeV and $\sigma(\phi)=4.20$ MeV is close to the "non-mixed" case.

Another question arises how results look like without MC PID and how PID is relevant for this study.

Final invariant mass plot:

Here phi mass distribution has much higher tails from combinatoric and eta_c reconstruction efficiency is 9.6% vs 11.6% applying MC PID.

Dima

File Attachments

- 1) [etac_ncharged_stt_mix.png](#), downloaded 584 times
 - 2) [etac_m_nocuts_stt_mix.png](#), downloaded 533 times
 - 3) [etac_m_final_vtx_stt_mix.png](#), downloaded 580 times
 - 4) [etac_m_final_vtx_stt_mix_nopid.png](#), downloaded 654 times
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