

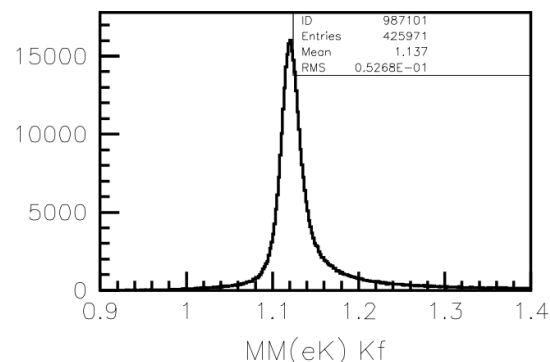
RG-K Win18 $K^+\Lambda$ Monte Carlo Analysis - pass-1 vs. pass-2 Reconstruction

Pass-1: 6.5.6.2, pass-2v1: 8.3.2, pass-2v2: 8c.3.2

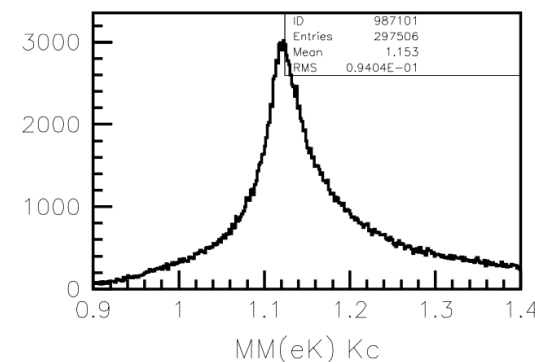
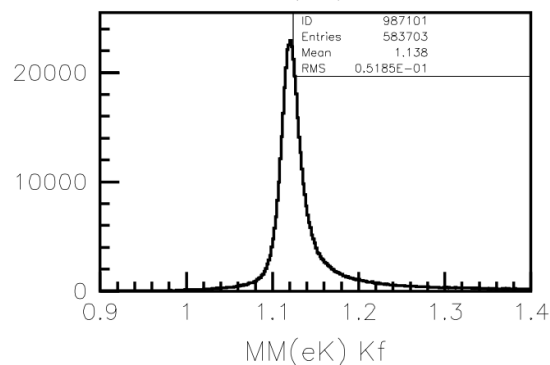
Areas of investigation:

- Forward Tracking:
 - Charged hadron reconstruction efficiency
- Central Tracking:
 - Missing mass resolution
 - Charged hadron reconstruction efficiency vs. p_T , v_z

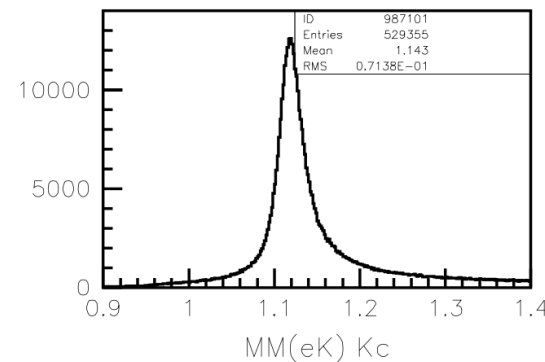
- EG: genKYandOnePion, $ep \rightarrow e'K^+\Lambda$, $\Lambda \rightarrow p\pi^-$
 Q^2 : [0.2:5.5] GeV^2 , W : [1.55:3.3] GeV , v_z : [-5.5:0.5] cm
- EB PID, $\chi^2_{pid} < 8$, β_{FD} : [0.4:1.1], β_{CD} : [0.2:1.1]
- Pass-1: no $p_T^{\min}$, z_v cuts
- Pass-2v1: $p_T^{\min}=125$ MeV, $z_v < 30$ cm
- Pass-2v2: $p_T^{\min}=250$ MeV, $z_v < 1$ cm



$e'K_F^+$: eff +37%



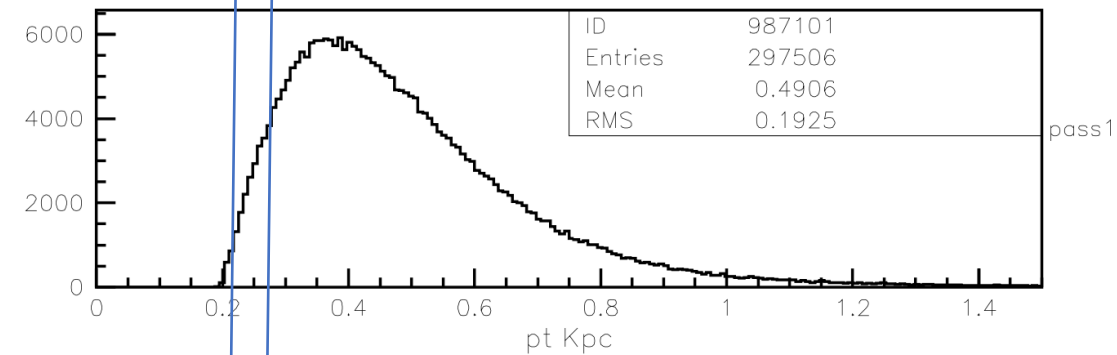
$e'K_C^+$: res +30%,
eff +80%!



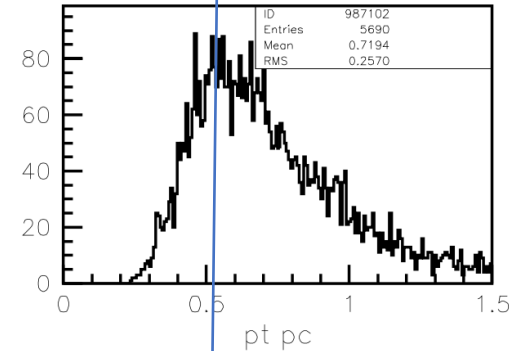
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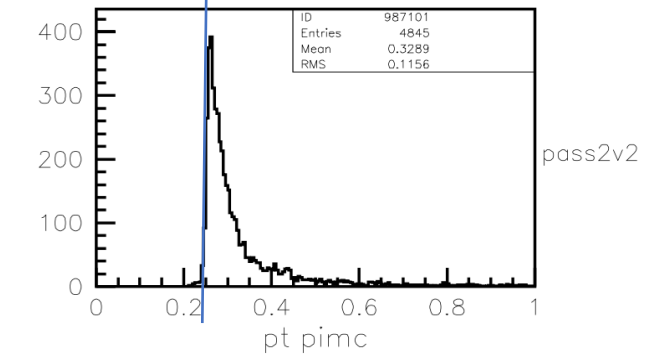
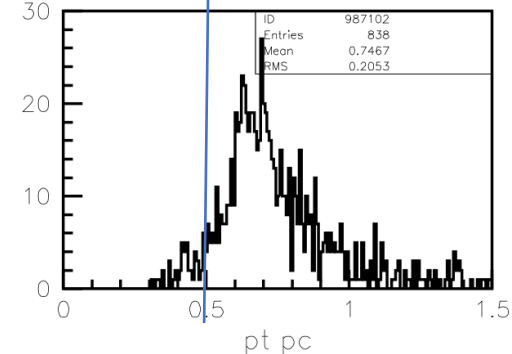
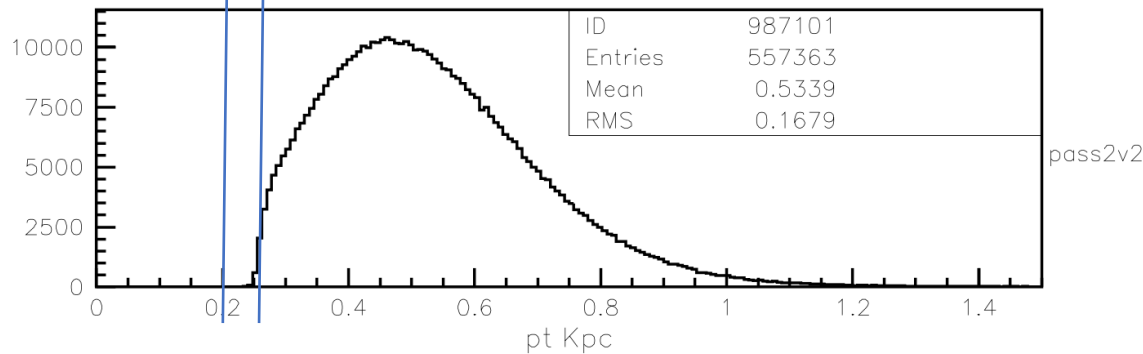
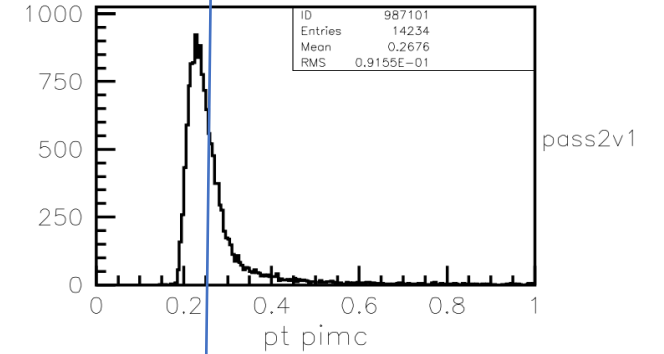
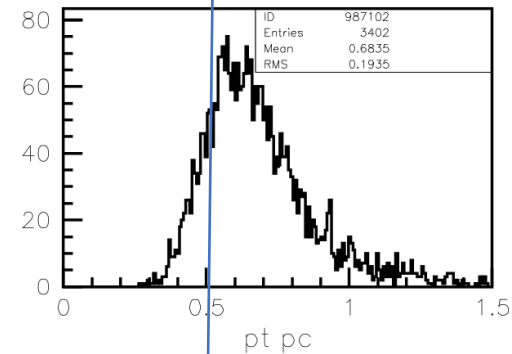
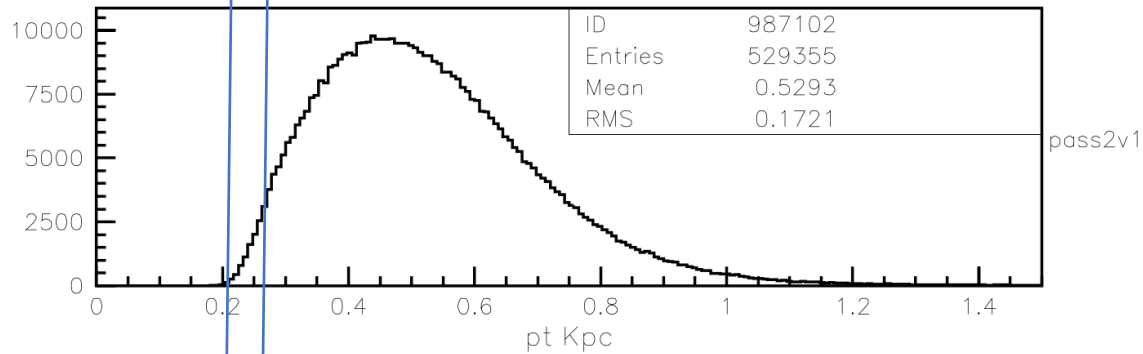
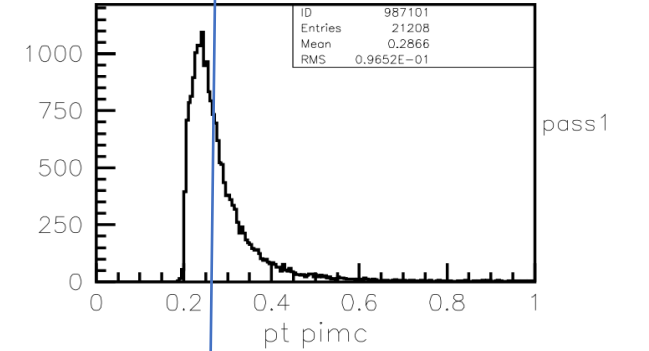
eK_c^+



$p_c\pi_c$



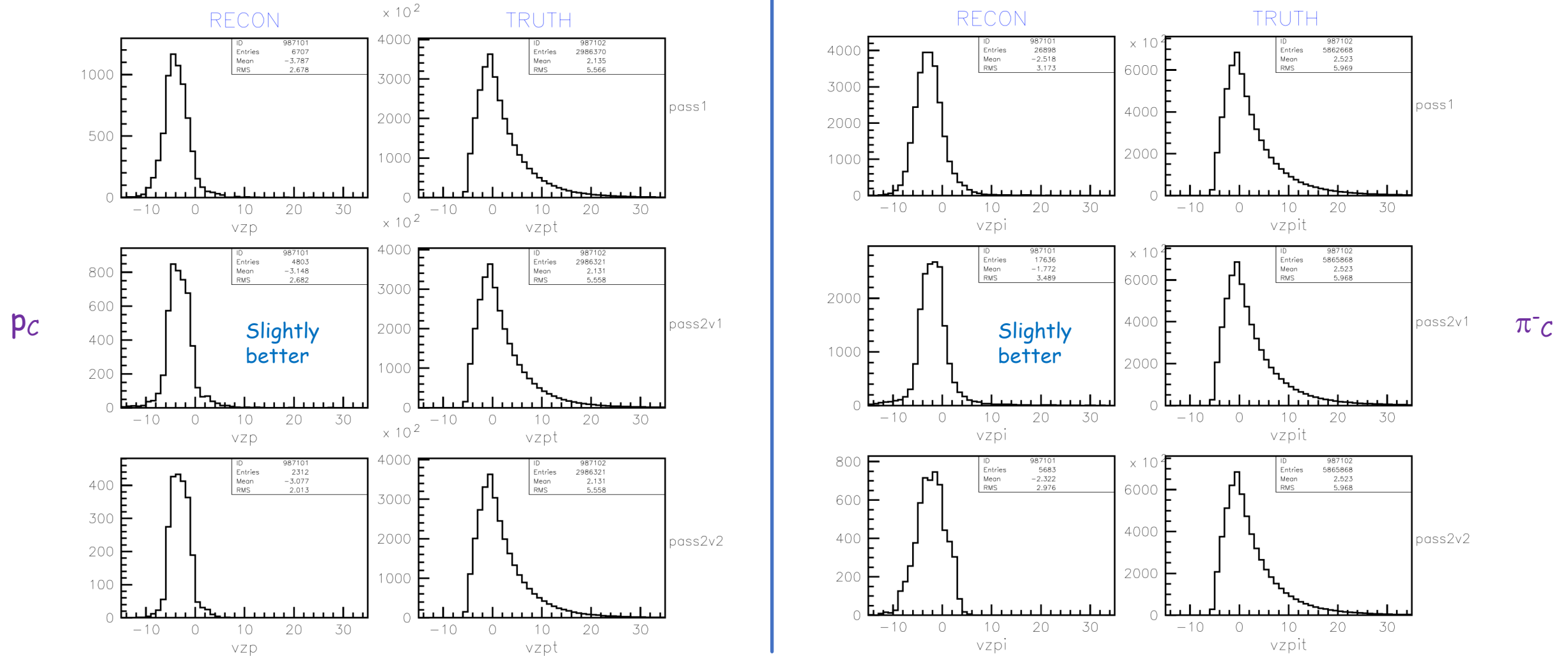
$p_F\pi_c$



Conclusion: p_T cut on pass-2v2 reconstruction cut into the acceptance, especially for π^-

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Conclusion: Efficiency reduced in pass-2 for events with detached vertex due to beamline constraint