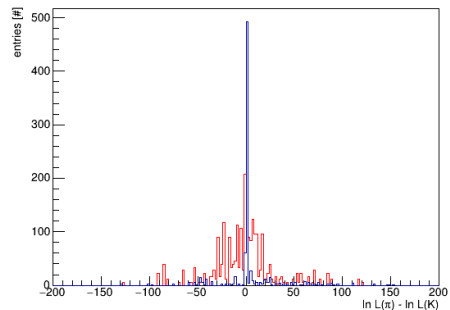


First looks at DIRC PID likelihood in the $K^+K^-\pi^+\pi^-p$ final state

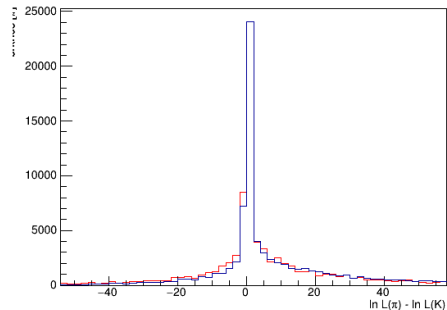
11/23/2020

Negative tracks in $K^+K^-\pi^+\pi^-$

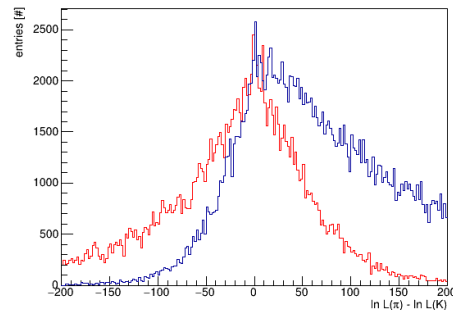
Track Momentum [0,500) MeV



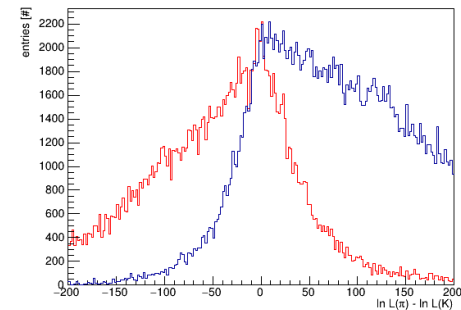
Track Momentum [500,1000) MeV



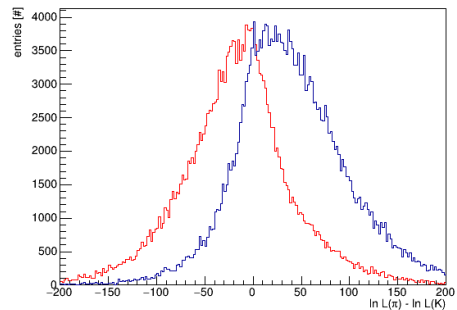
Track Momentum [1000,1500) MeV



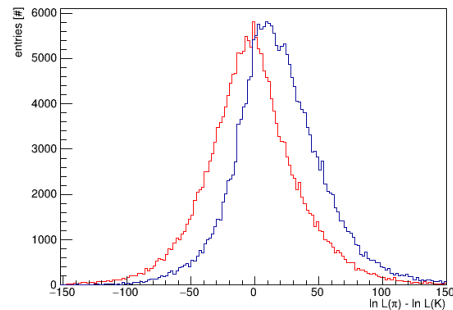
Track Momentum [1500,2000) MeV



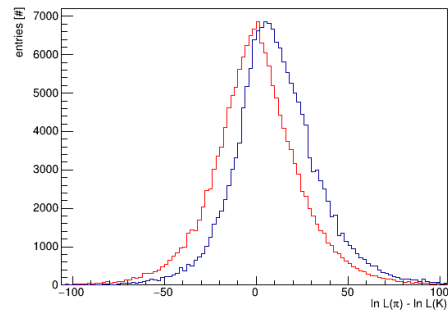
Track Momentum [2000,2500) MeV



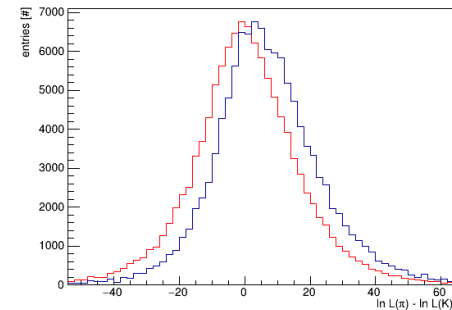
Track Momentum [2500,3000) MeV



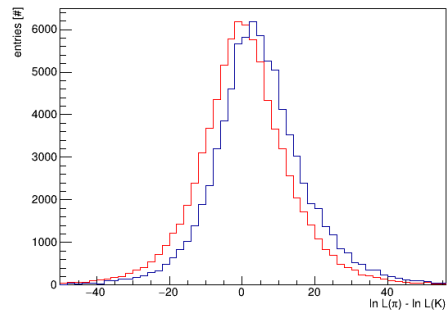
Track Momentum [3000,3500) MeV



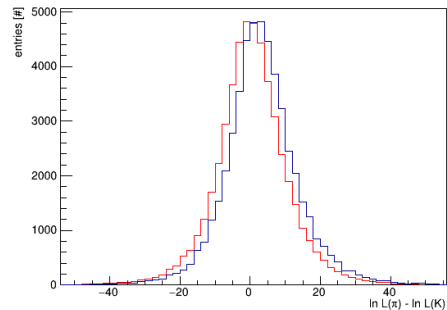
Track Momentum [3500,4000) MeV



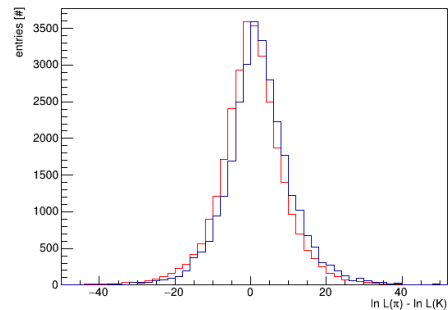
Track Momentum [4000,4500) MeV



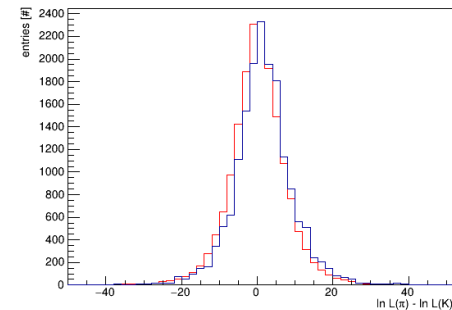
Track Momentum [4500,5000) MeV



Track Momentum [5000,5500) MeV

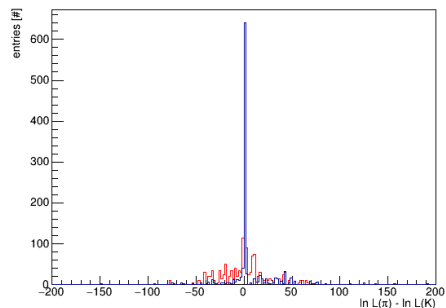


Track Momentum [5500,6000) MeV

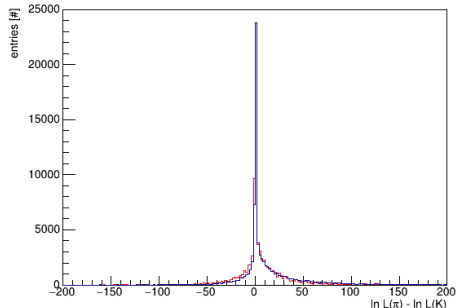


Positive tracks in $K^+K^-\pi^+\pi^-$

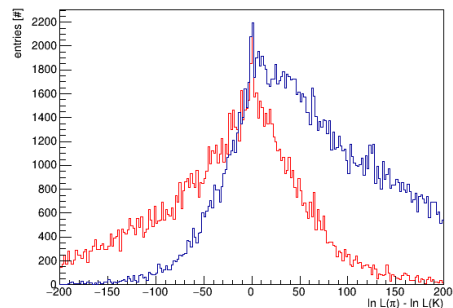
Track Momentum [0,500] MeV



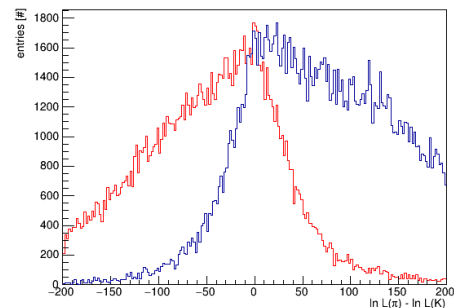
Track Momentum [500,1000] MeV



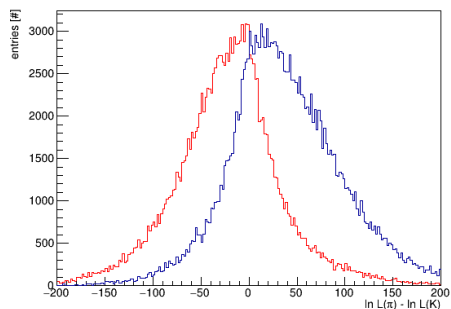
Track Momentum [1000,1500] MeV



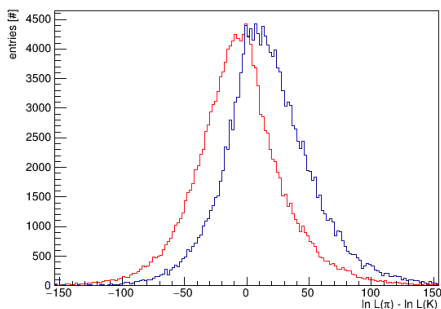
Track Momentum [1500,2000] MeV



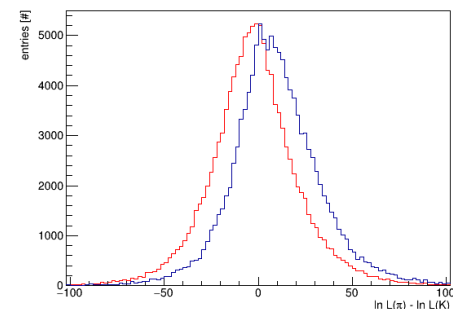
Track Momentum [2000,2500] MeV



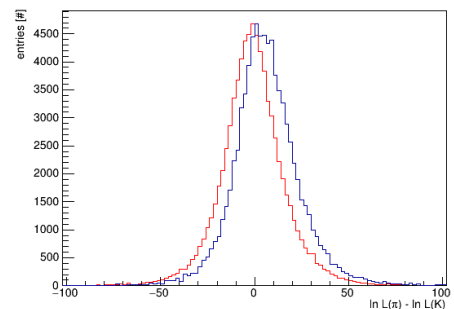
Track Momentum [2500,3000] MeV



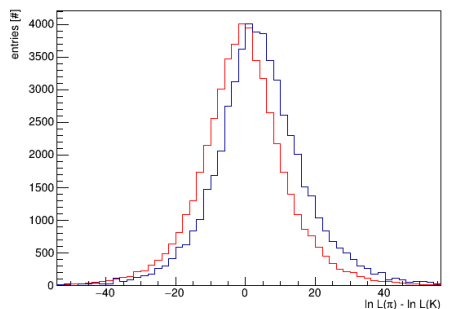
Track Momentum [3000,3500] MeV



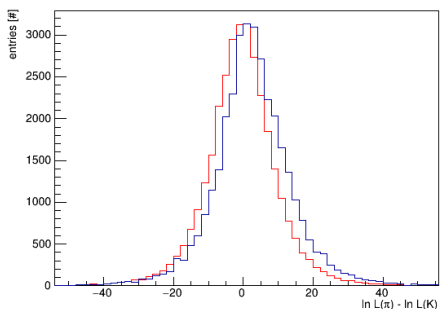
Track Momentum [3500,4000] MeV



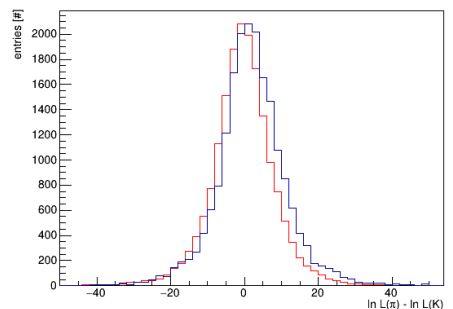
Track Momentum [4000,4500] MeV



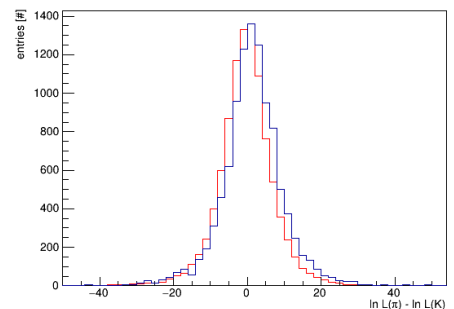
Track Momentum [4500,5000] MeV



Track Momentum [5000,5500] MeV

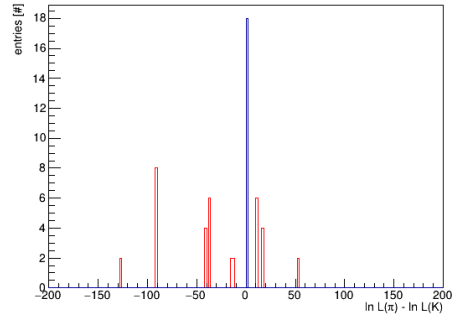


Track Momentum [5500,6000] MeV

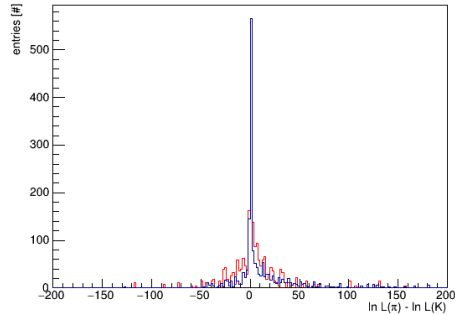


Negative tracks in $K^+K^-\pi^+\pi^-$, $1.01 < M(KK) < 1.03$

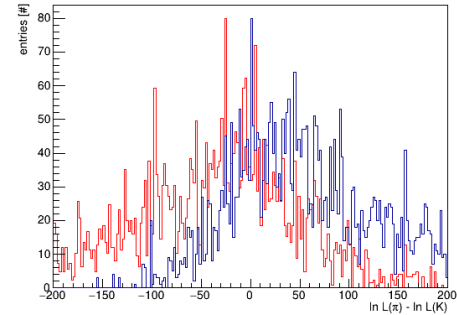
Track Momentum [0,500) MeV



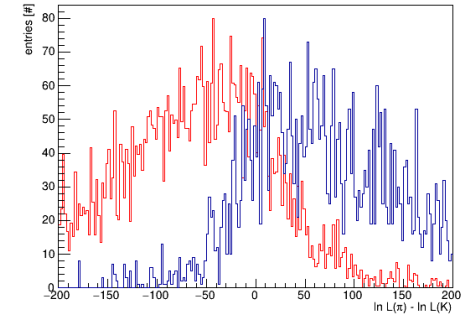
Track Momentum [500,1000) MeV



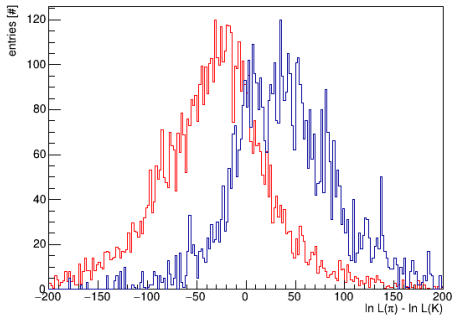
Track Momentum [1000,1500) MeV



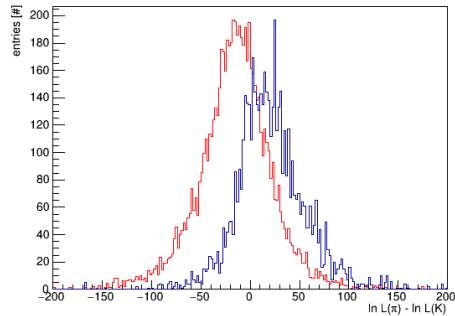
Track Momentum [1500,2000) MeV



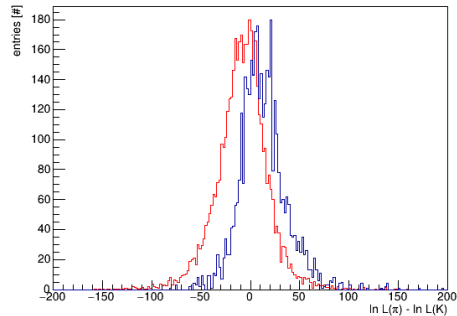
Track Momentum [2000,2500) MeV



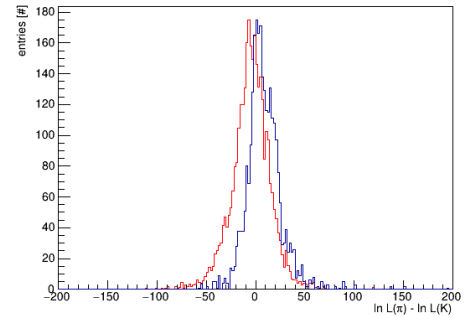
Track Momentum [2500,3000) MeV



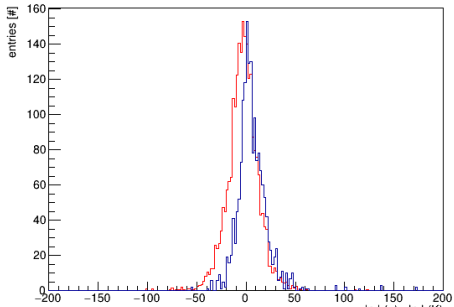
Track Momentum [3000,3500) MeV



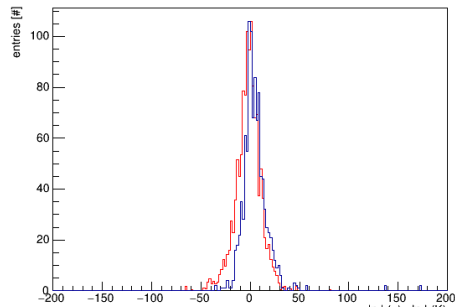
Track Momentum [3500,4000) MeV



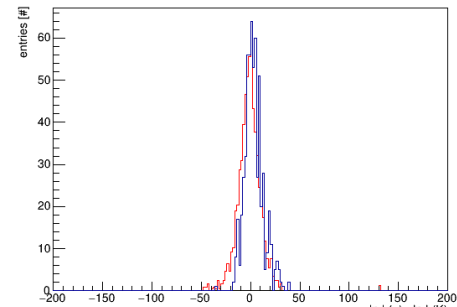
Track Momentum [4000,4500) MeV



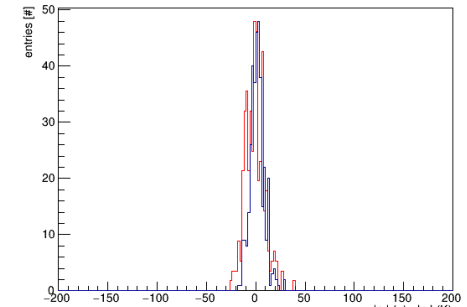
Track Momentum [4500,5000) MeV



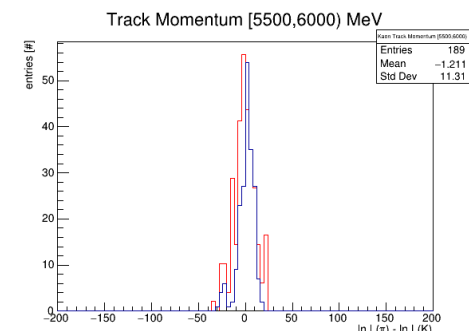
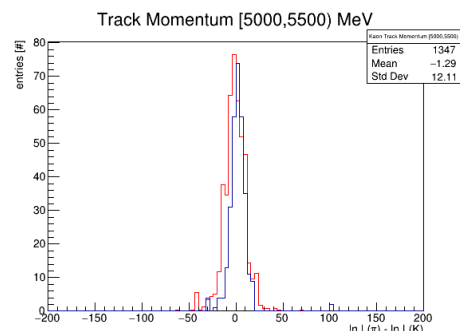
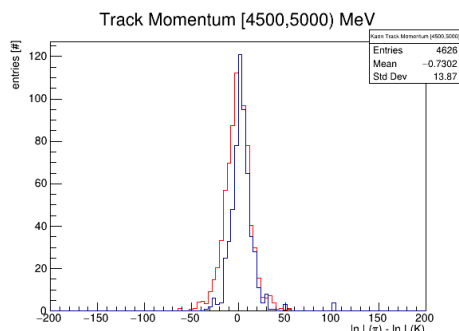
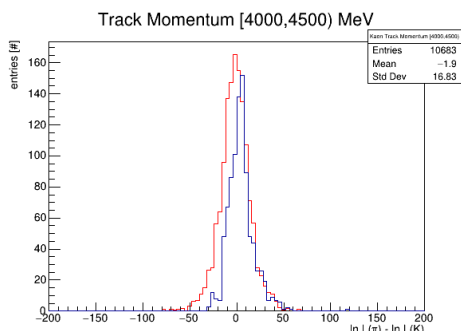
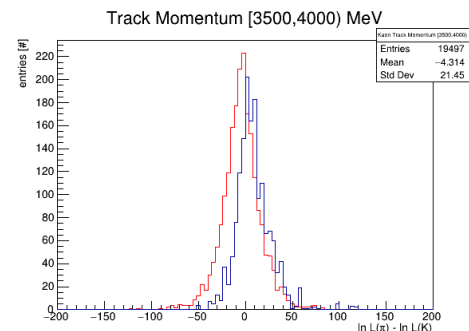
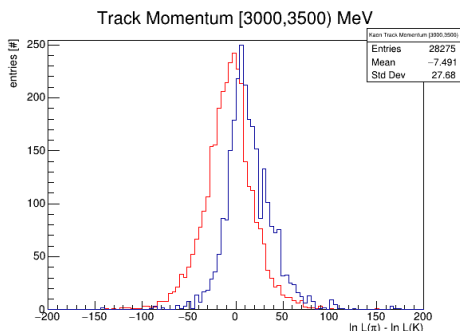
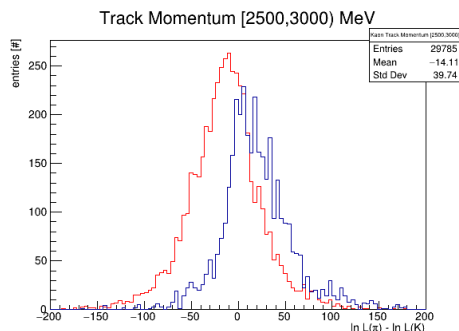
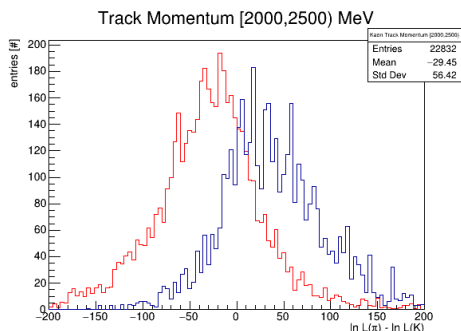
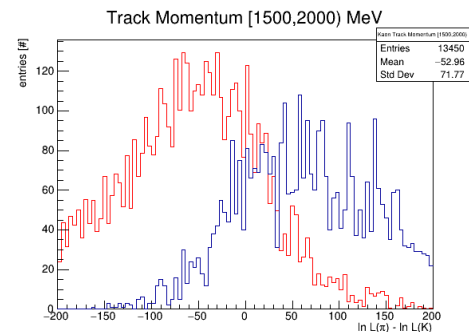
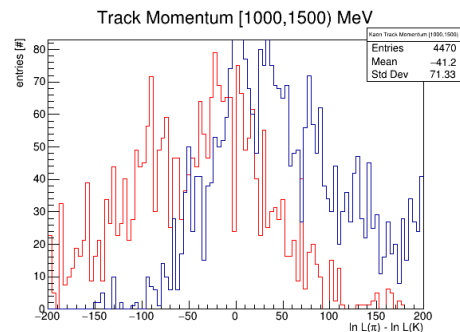
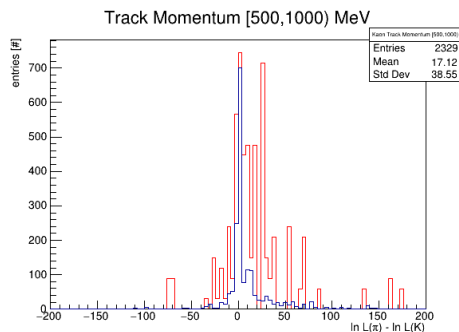
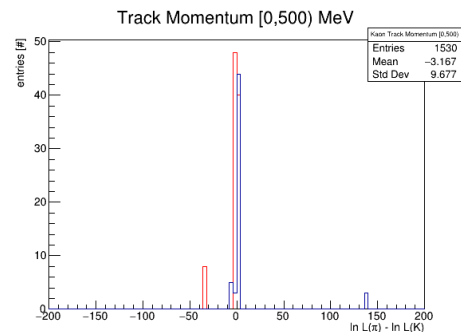
Track Momentum [5000,5500) MeV



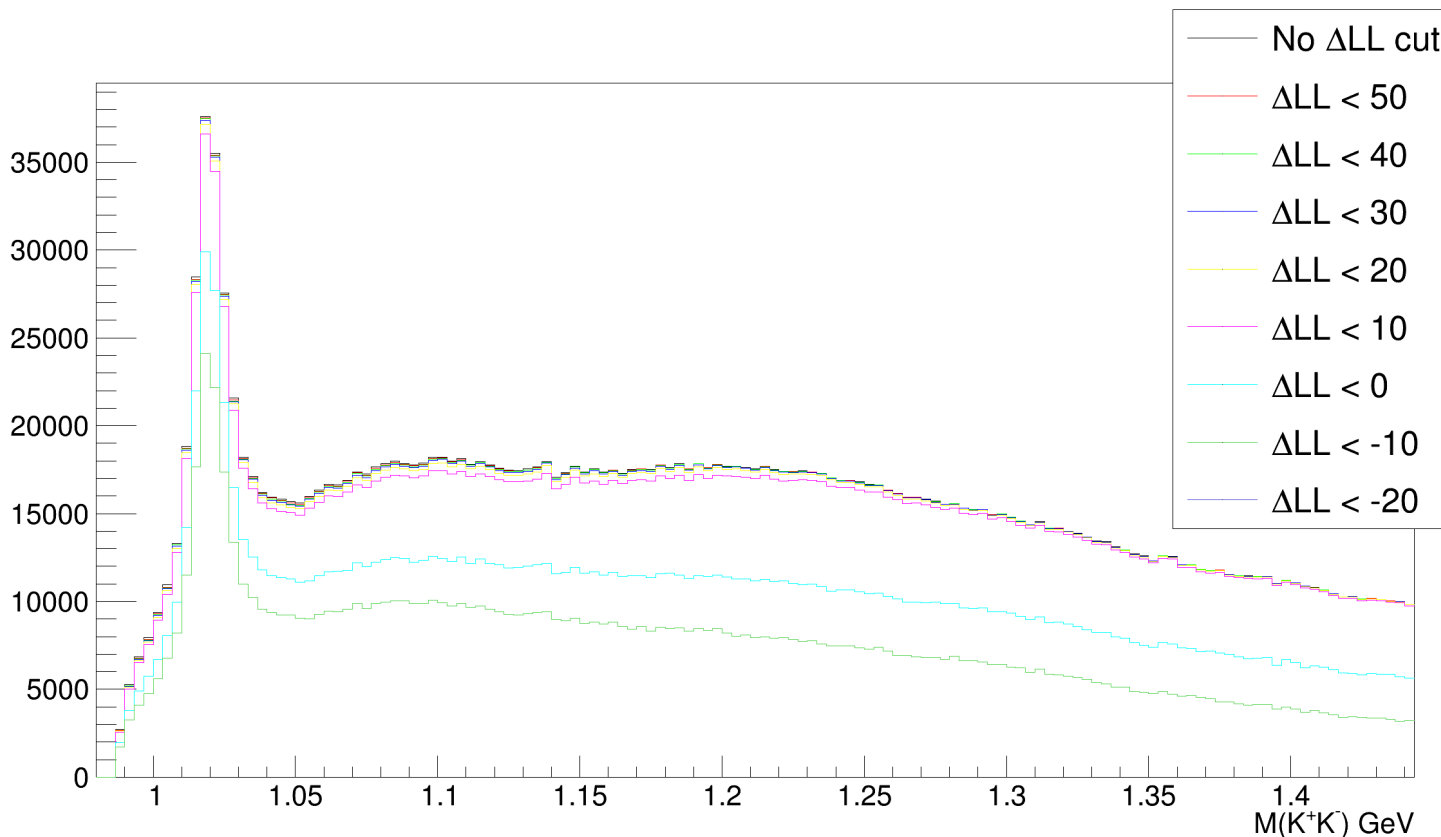
Track Momentum [5500,6000) MeV



Positive tracks in $K^+K^-\pi^+\pi^-$



$\Delta LL = \ln L(\pi) - \ln L(K)$ cuts on ϕ signal/background



ΔLL Cut	Signal/Background
None	1.25
< 50	0.96
< 40	0.97
< 30	0.97
< 20	0.98
< 10	0.99
< 0	1.08
< -10	1.04
< -20	0.96

Signal/background determined from a Gaussian+polynomial fit to the ϕ peak in the $M(KK)$ distribution