

04/17/2024

Particle Matching -Pions-

$$-1 < \eta < 1$$

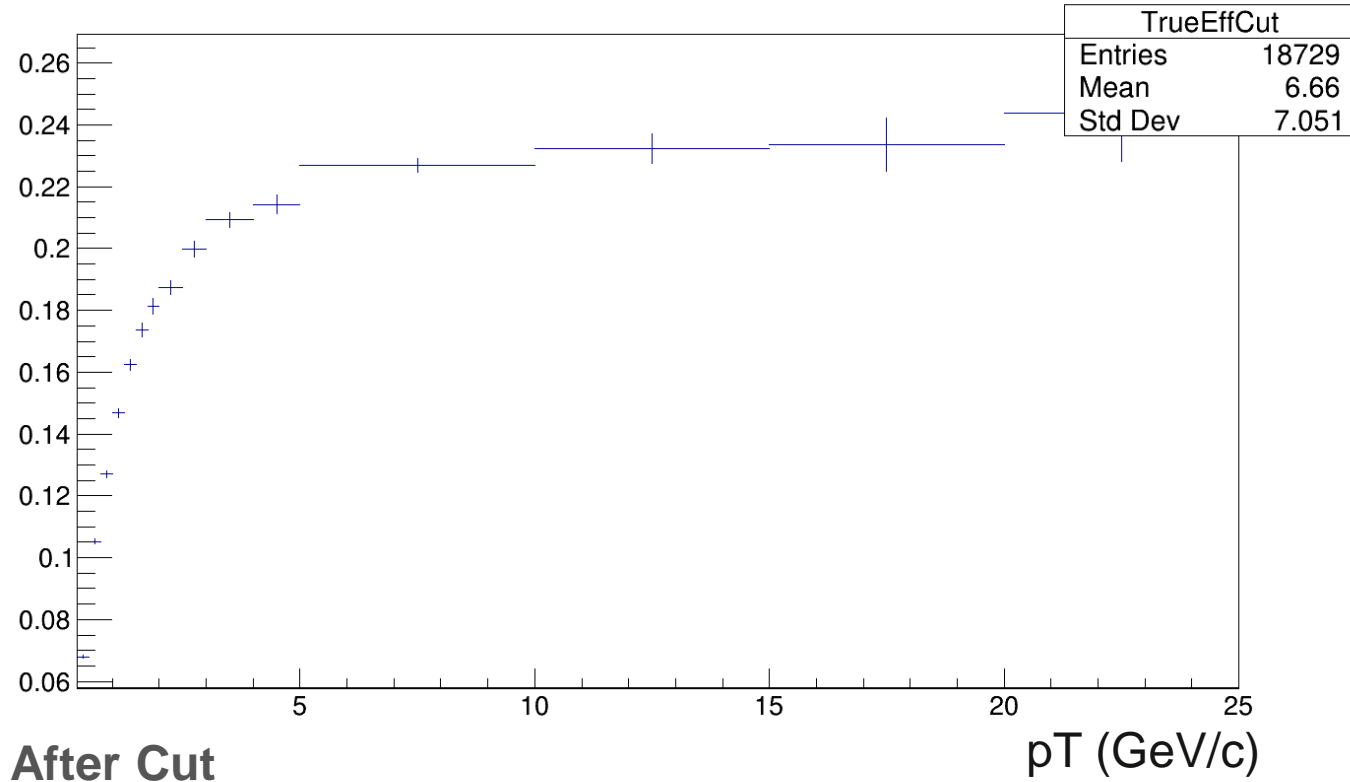
Efrain Alvarado

Dr. Olga Evdokimov



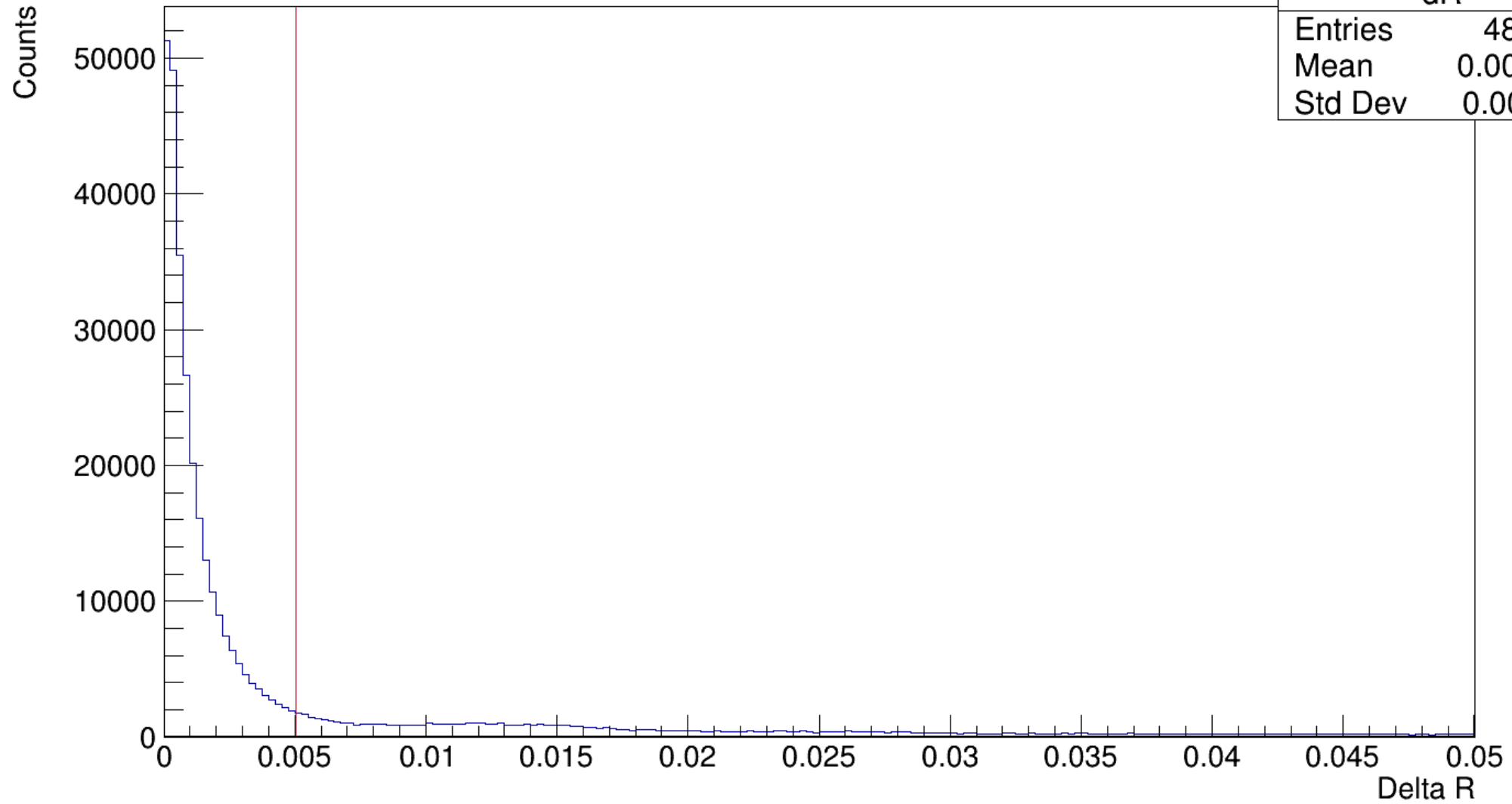


True Efficiency



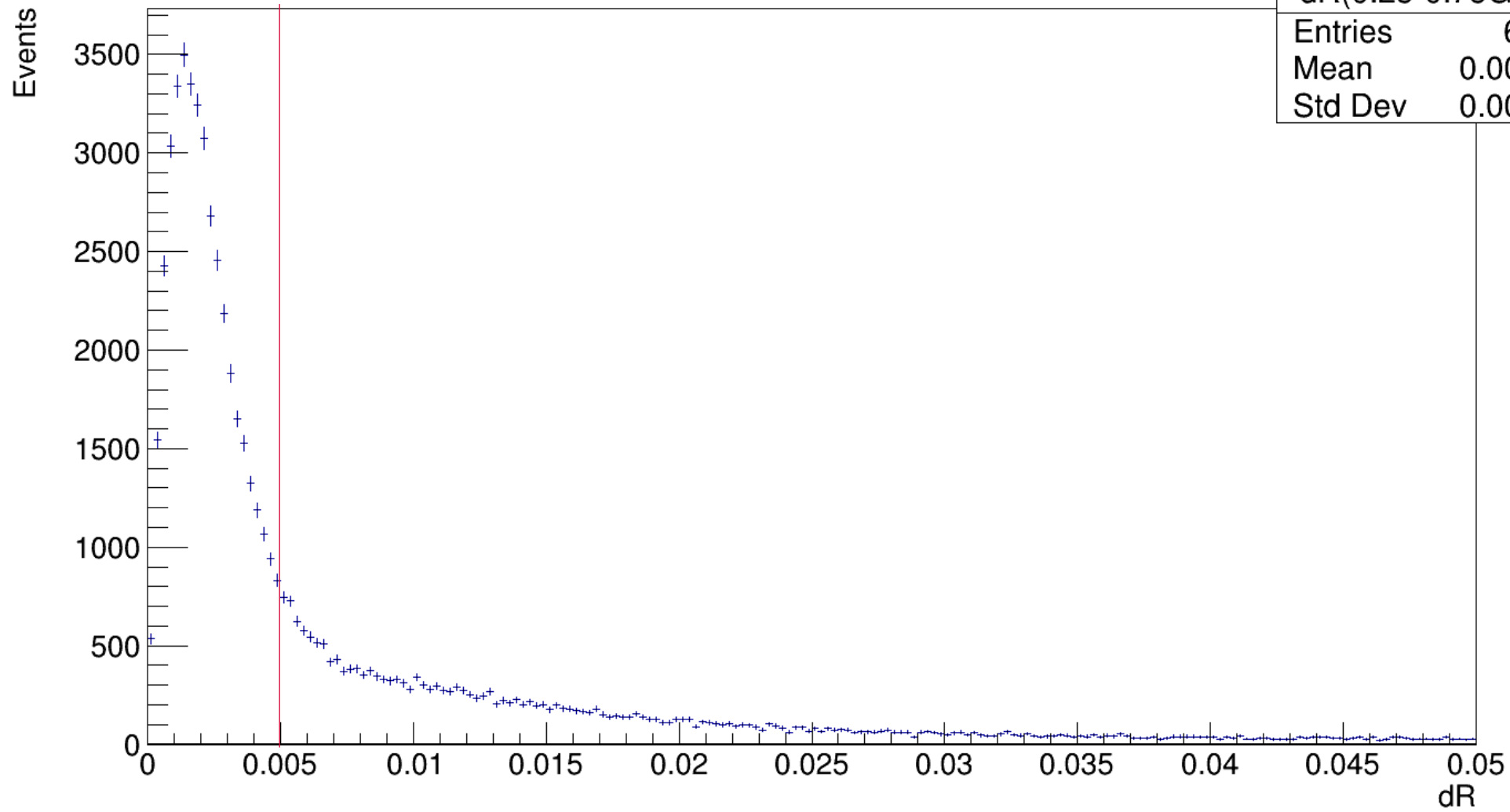
$$TrueEff = \frac{gen_pT_matched}{gen_pT_all}$$

Delta R

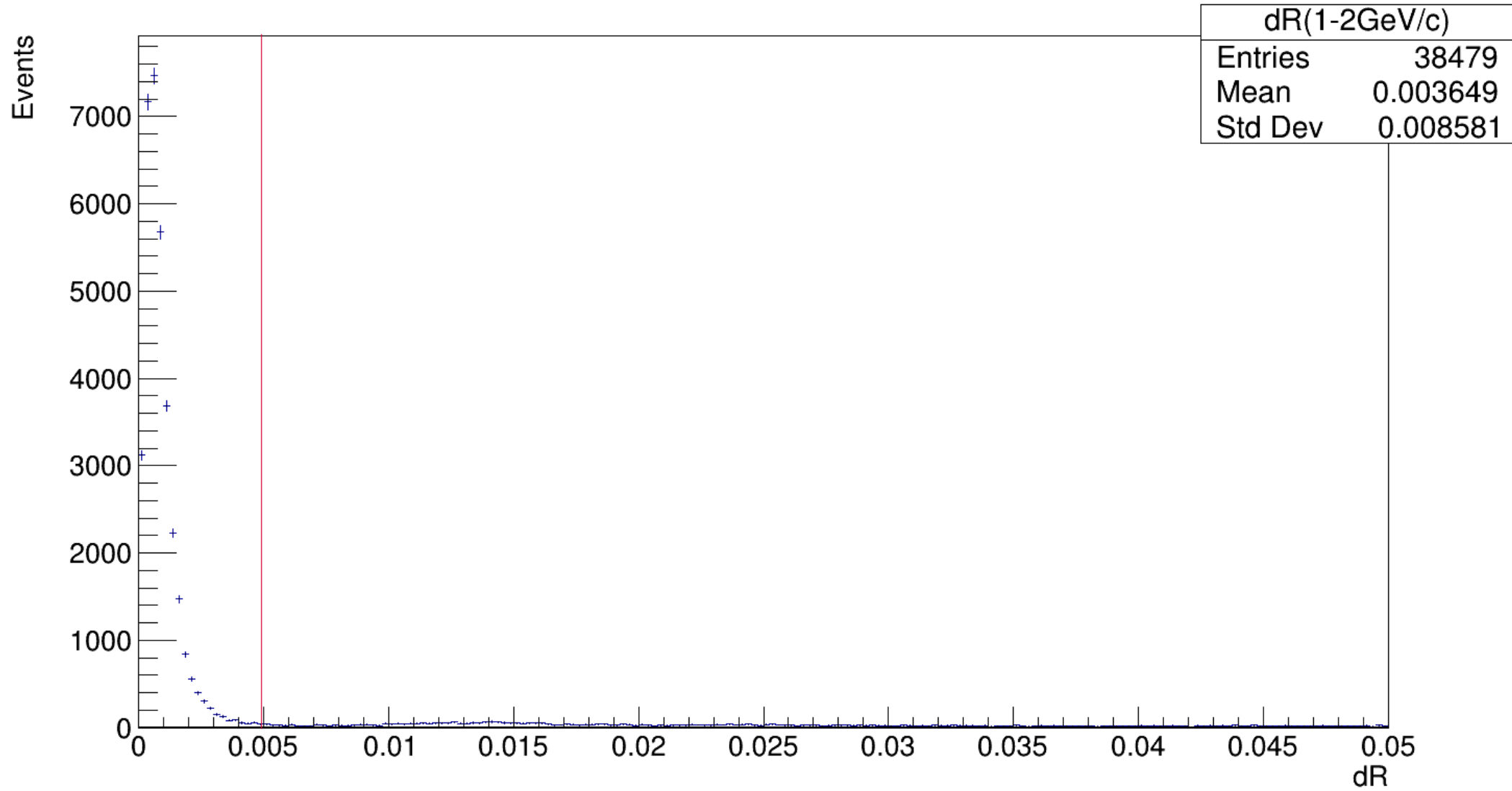


All $dR > 0.005$ is cut

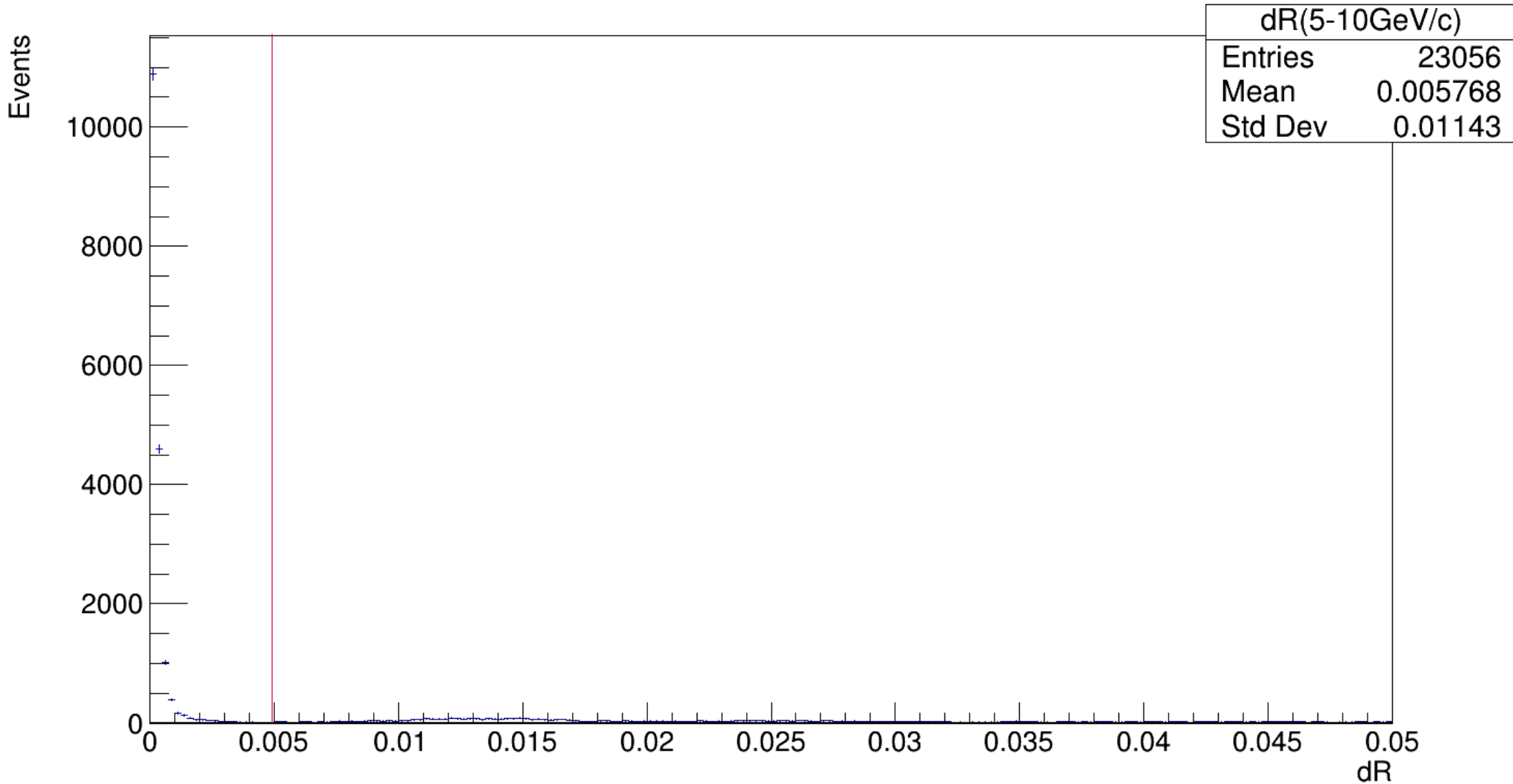
dR(0.25-0.75GeV/c)



dR(1-2GeV/c)



dR(5-10GeV/c)

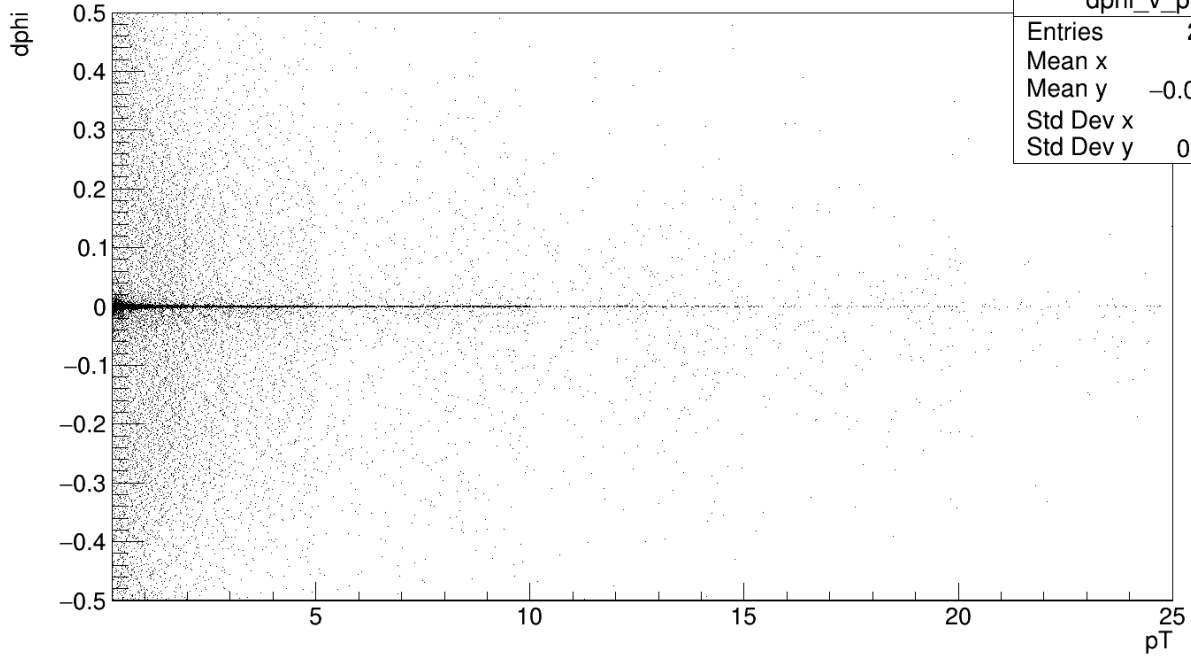




Effective Sigma vs pT

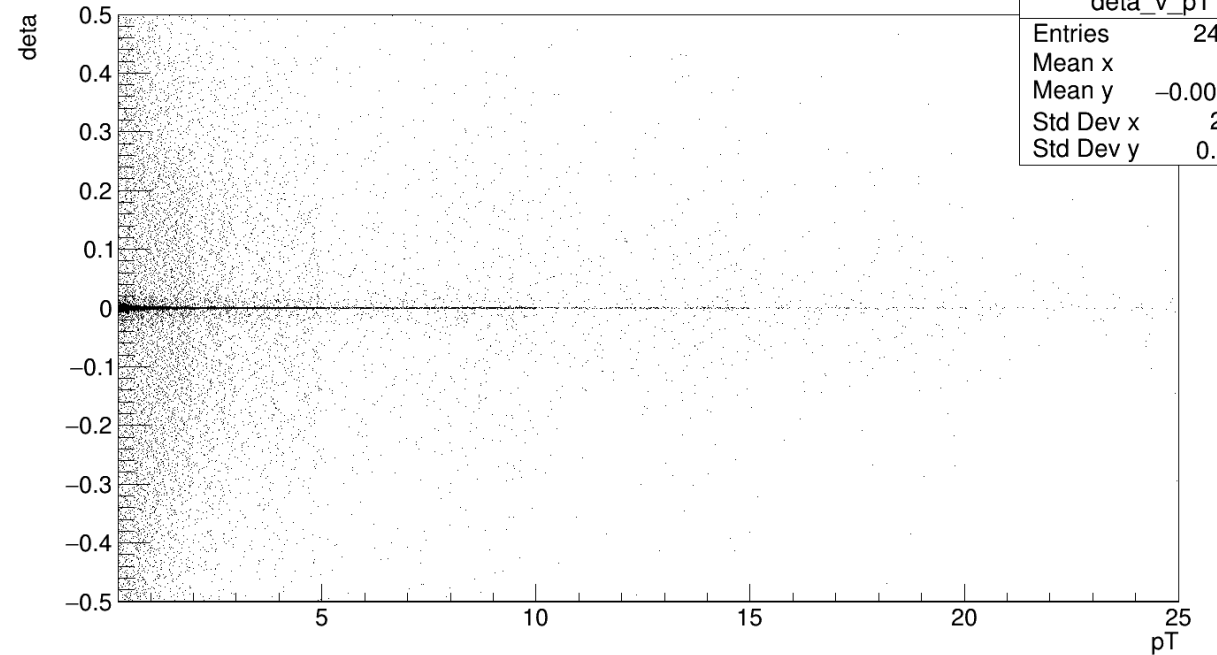
dphi and deta vs pT

dphi_v_pT



dphi_v_pT	
Entries	242771
Mean x	2.419
Mean y	-0.005892
Std Dev x	2.892
Std Dev y	0.07419

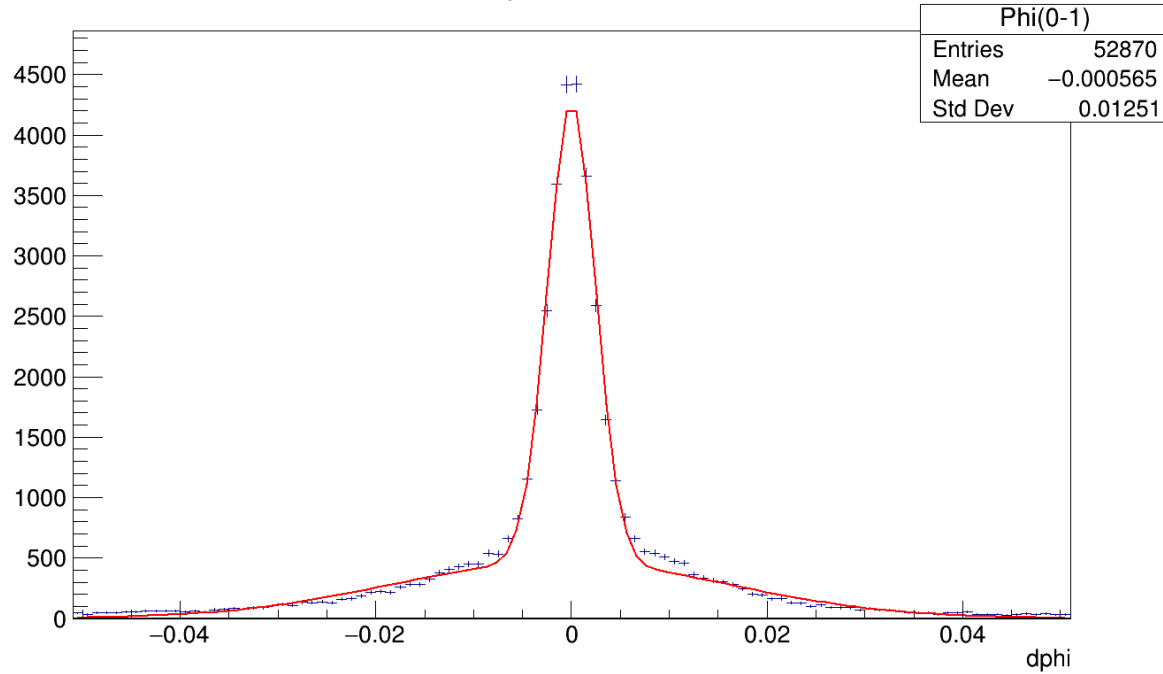
deta_v_pT



deta_v_pT	
Entries	242771
Mean x	2.41
Mean y	-0.002407
Std Dev x	2.887
Std Dev y	0.0736

dphi Double Gaussian Fits at different pT

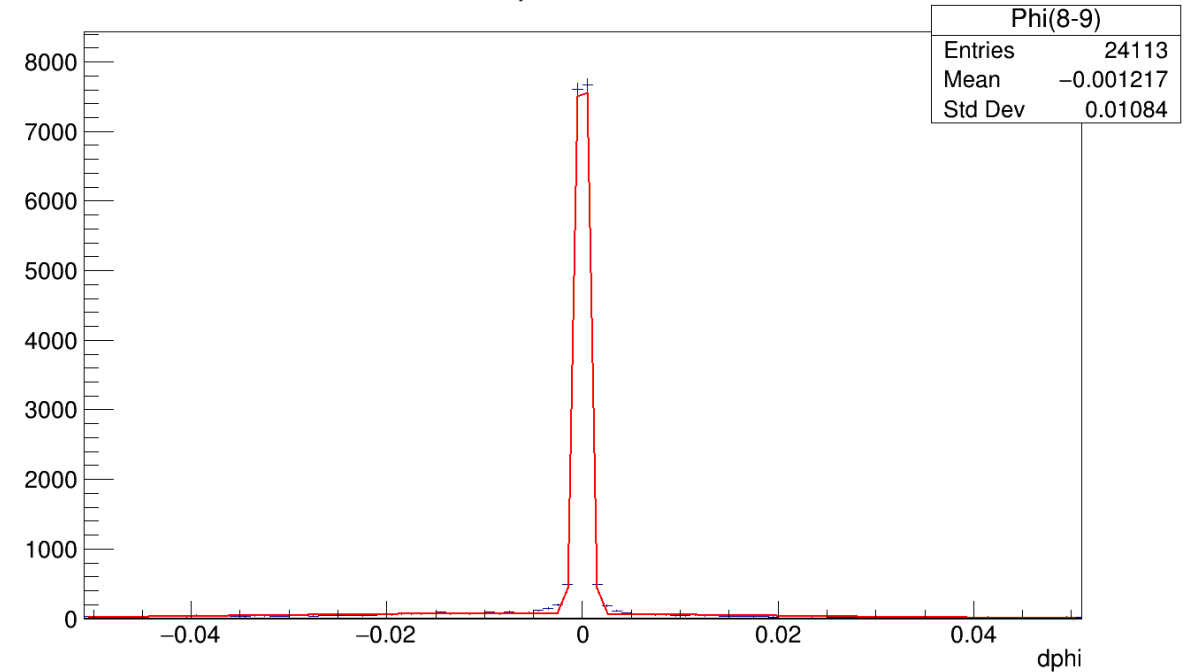
dphi_v_PT



0.25-0.50 GeV/c

dphi_v_PT

2.5-3 GeV/c



Calculating Effective Sigma

$$\sigma_{effective} = \sqrt{\left(\frac{A_1}{A_1 + A_2}\right) \sigma_1^2 + \left(\frac{A_2}{A_1 + A_2}\right) \sigma_2^2}$$

