

03/20/2024

# Particle Matching

Efrain Alvarado

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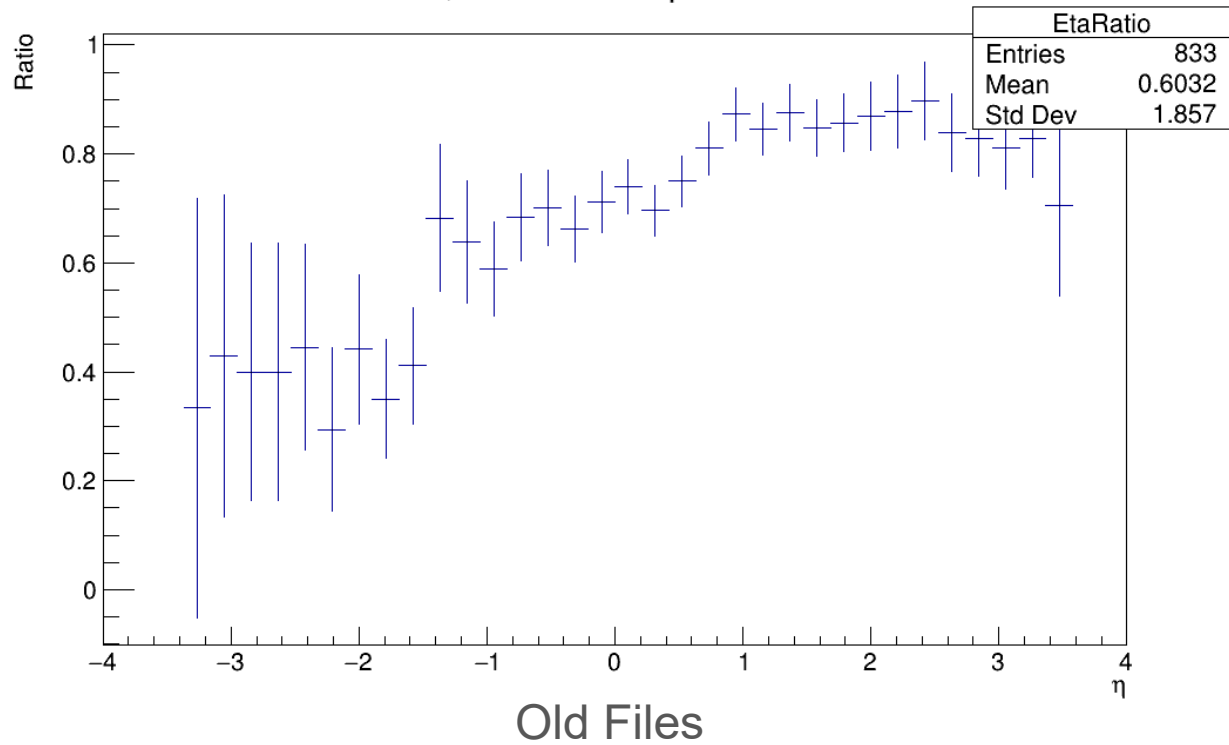






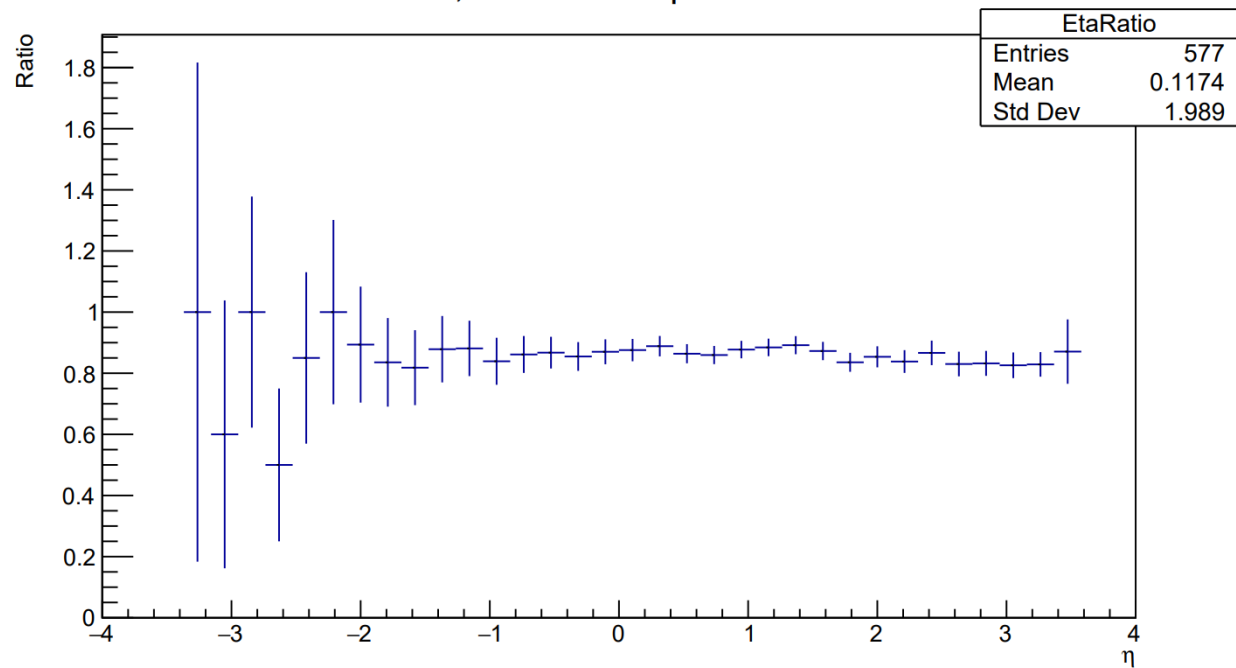
# Update on Proton Efficiencies

Ratio Eta, 0.0 GeV/c < pT < 20.0 GeV/c



New Files

Ratio Eta, 0.0 GeV/c < pT < 20.0 GeV/c

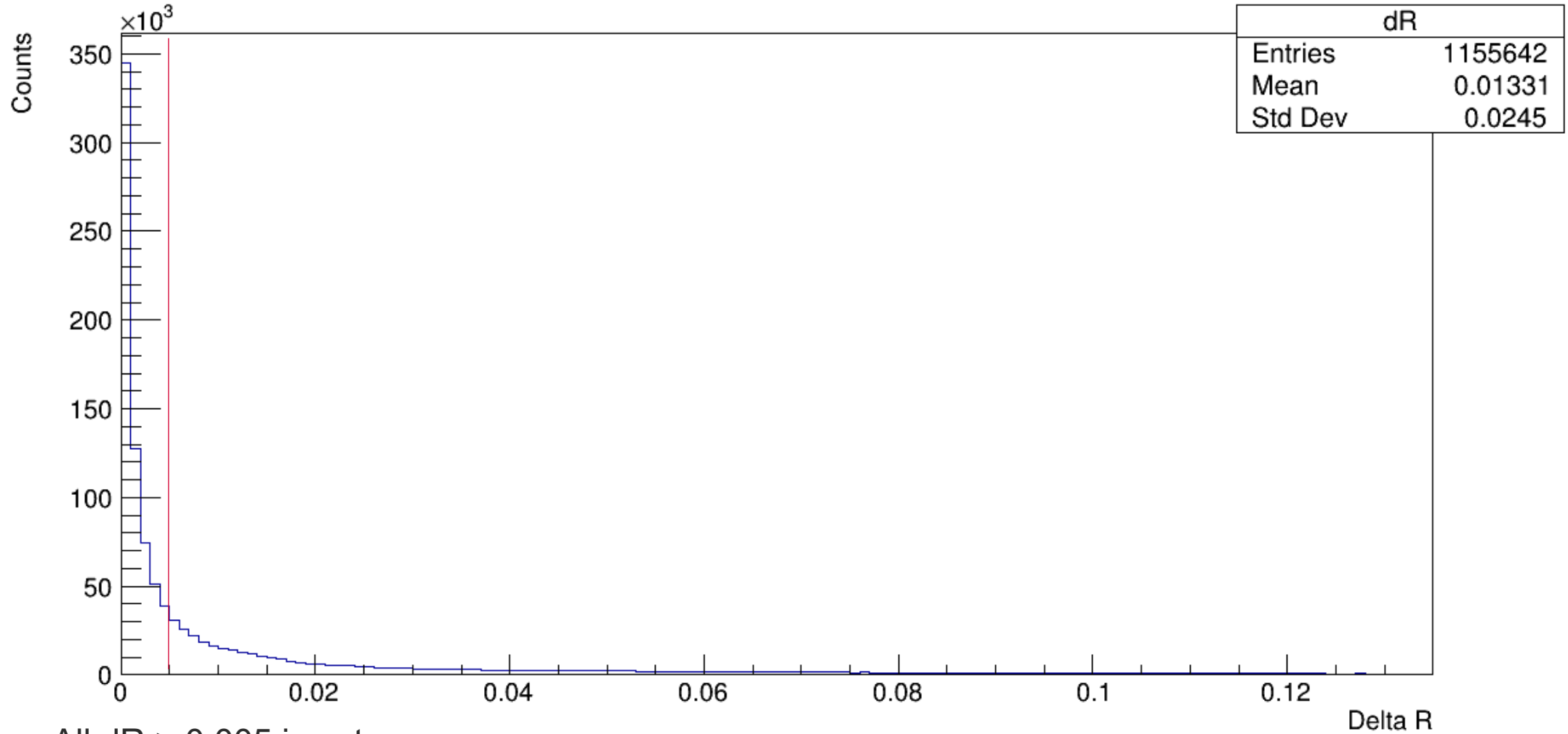


An aerial photograph of a university campus, overlaid with a semi-transparent blue filter. The image shows a large, multi-level plaza with many people walking. Several signs with the 'UIC' logo are visible. The text 'How matching is done' is centered in white, bold font.

# How matching is done

$$dR = \sqrt{(\eta_r - \eta_g)^2 + (\phi_r - \phi_g)^2}$$

Delta R



All dR > 0.005 is cut





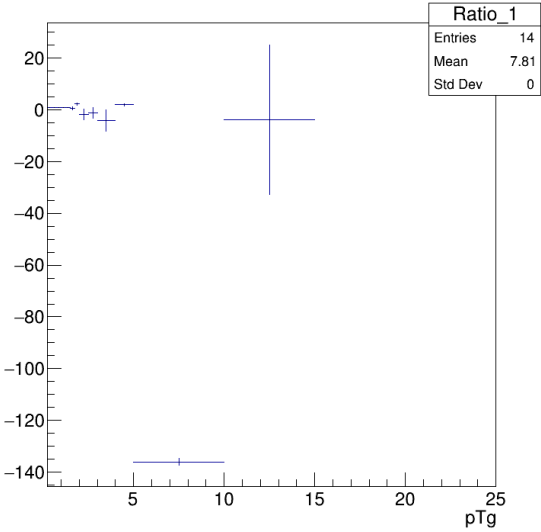
# η Ranges

# Backward – $-3 < \eta < -1$

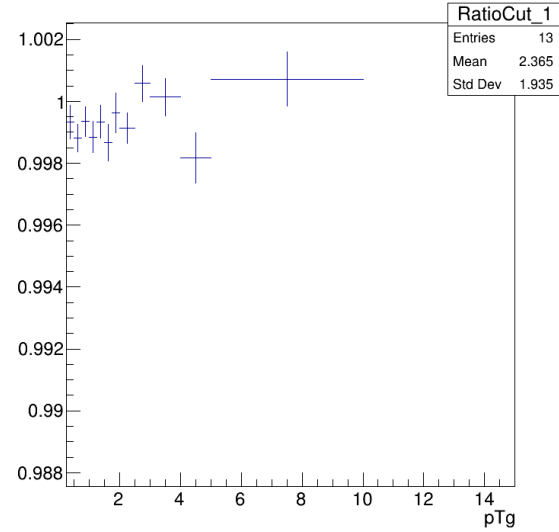
Mean

Sigma

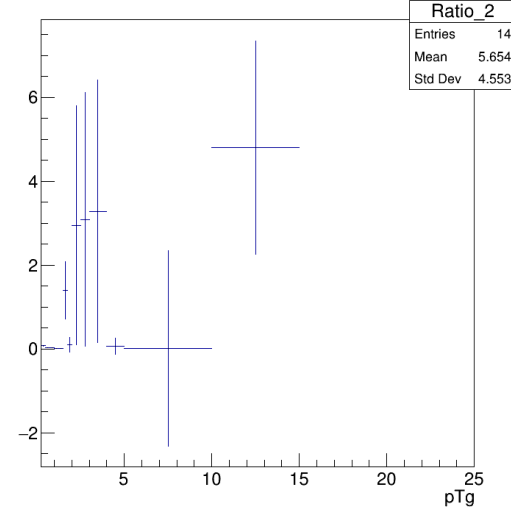
Fitted value of par[1]=Mean



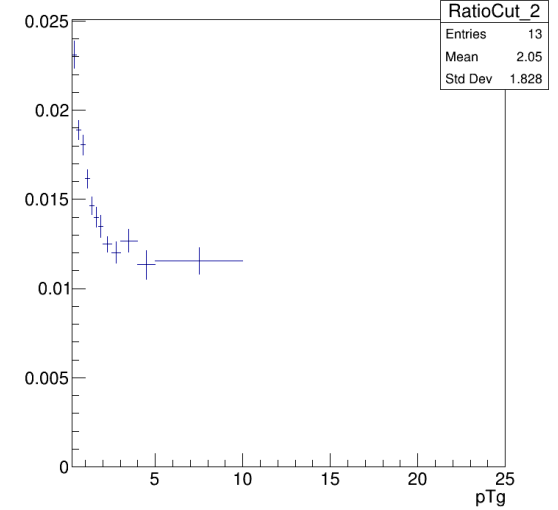
Fitted value of par[1]=Mean



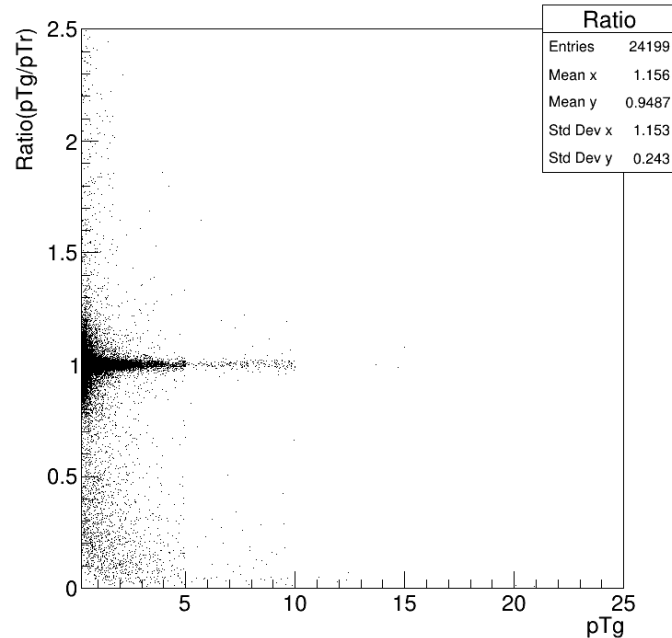
Fitted value of par[2]=Sigma



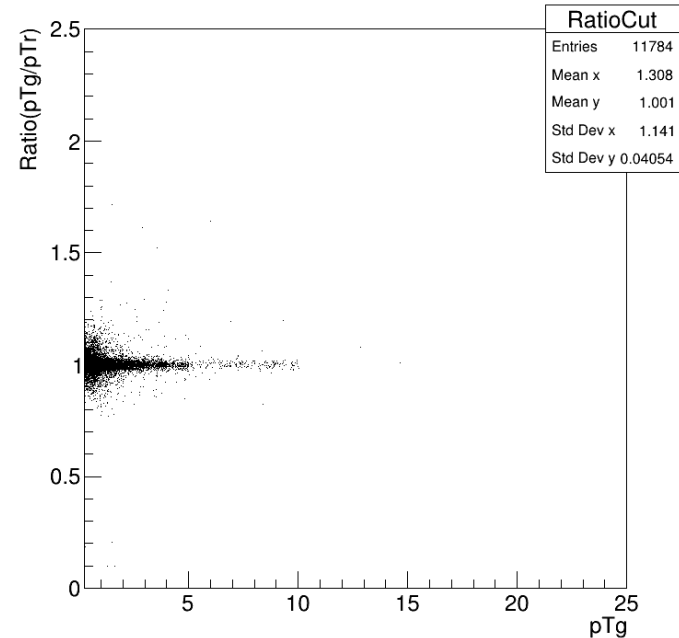
Fitted value of par[2]=Sigma



Ratio



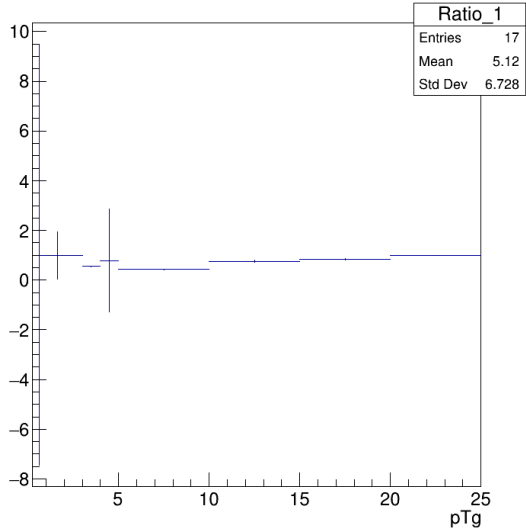
Ratio Cut



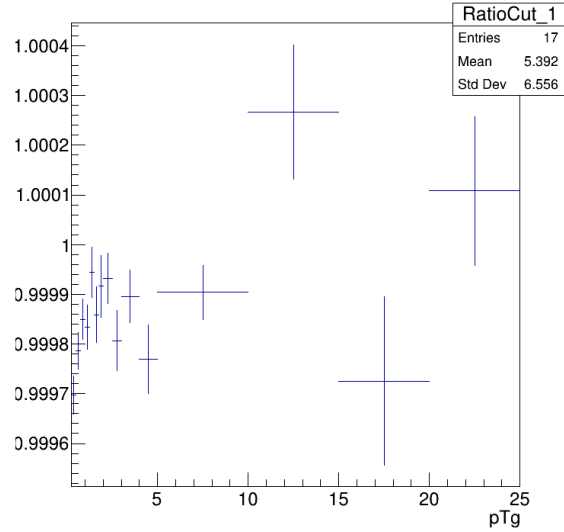
# Mid Range – $-1 < \eta < 1$

Mean

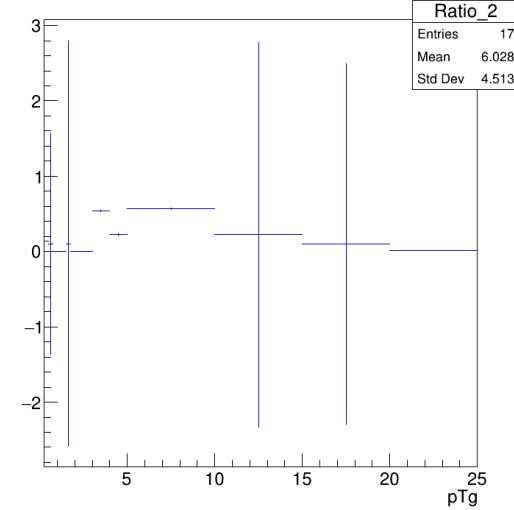
Fitted value of par[1]=Mean



Fitted value of par[1]=Mean

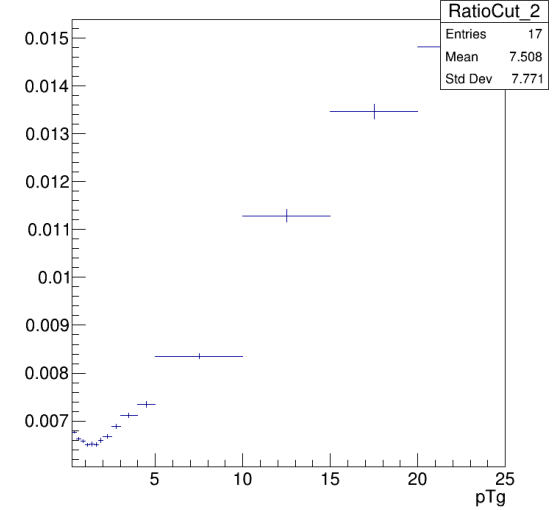


Fitted value of par[2]=Sigma

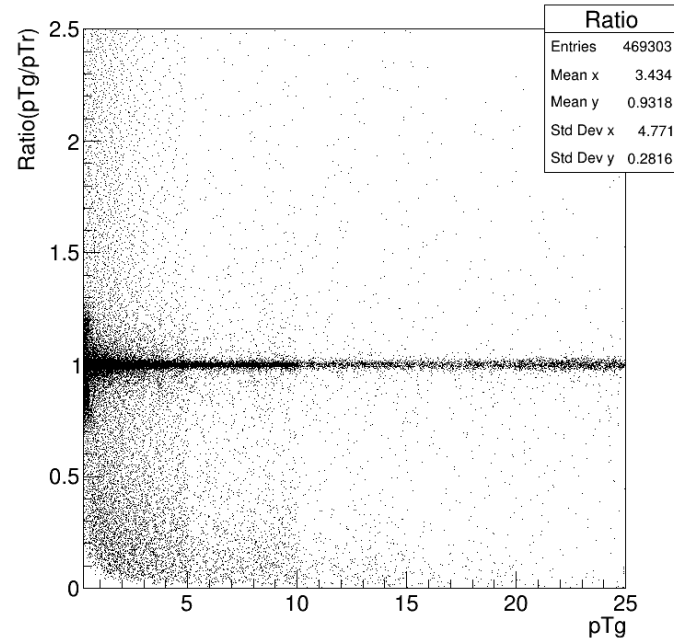


Sigma

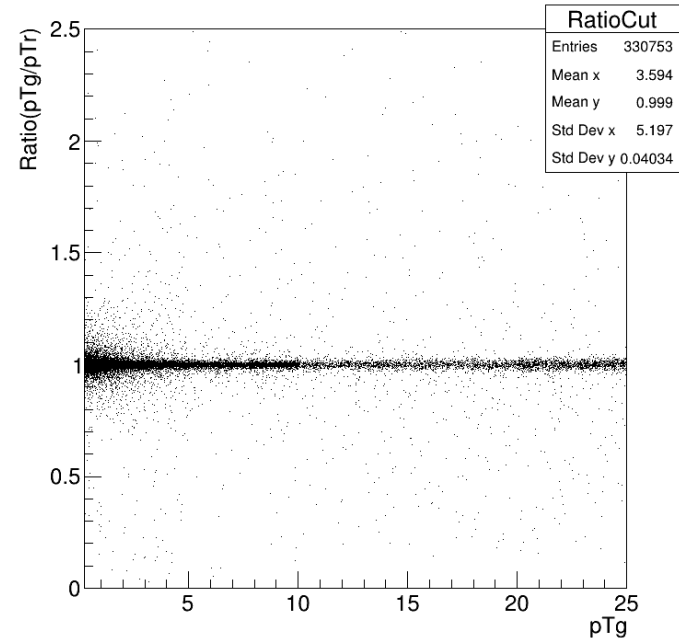
Fitted value of par[2]=Sigma



Ratio



Ratio Cut

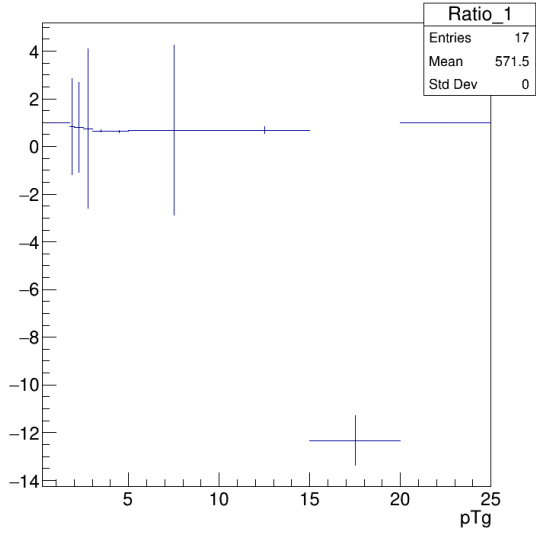




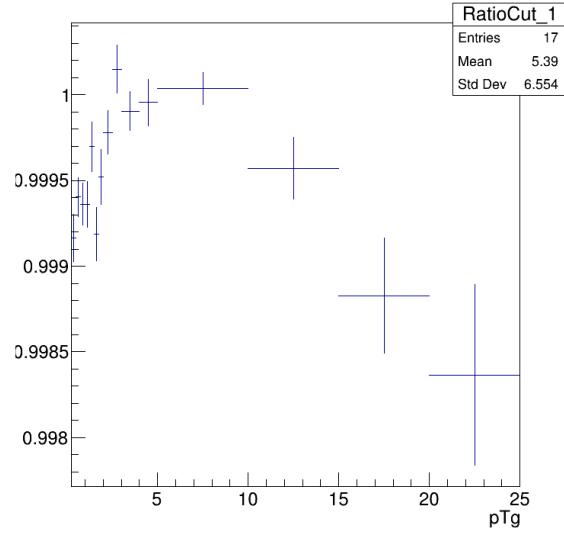
# Forward – $1 < \eta < 3$

Mean

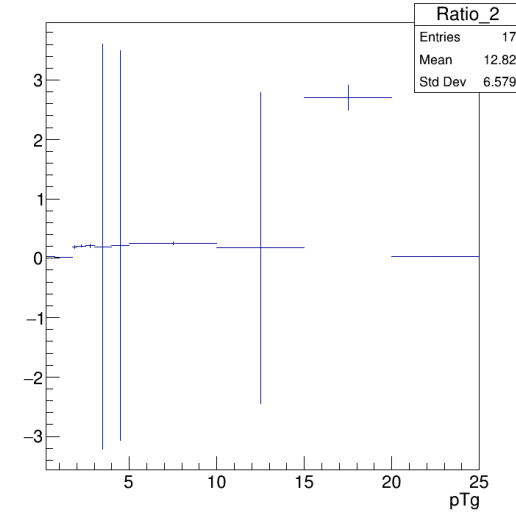
Fitted value of par[1]=Mean



Fitted value of par[1]=Mean

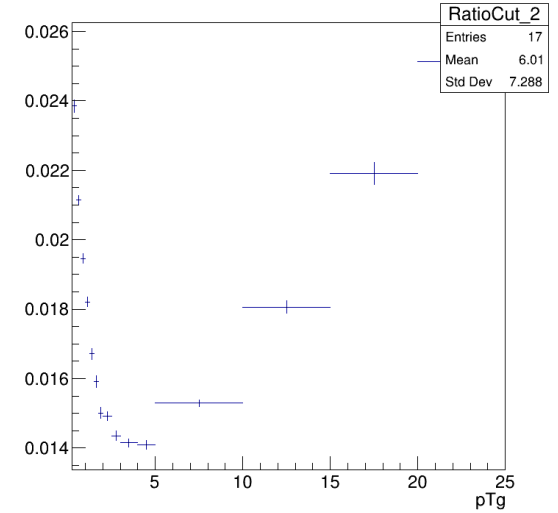


Fitted value of par[2]=Sigma

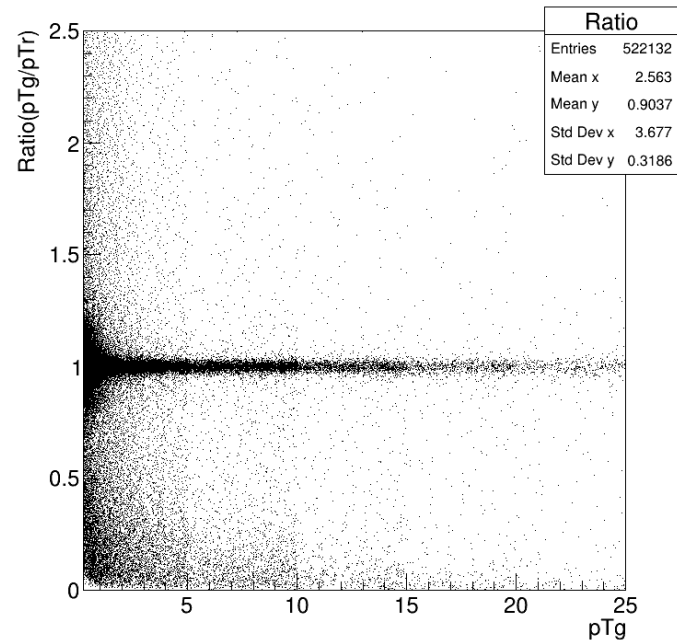


Sigma

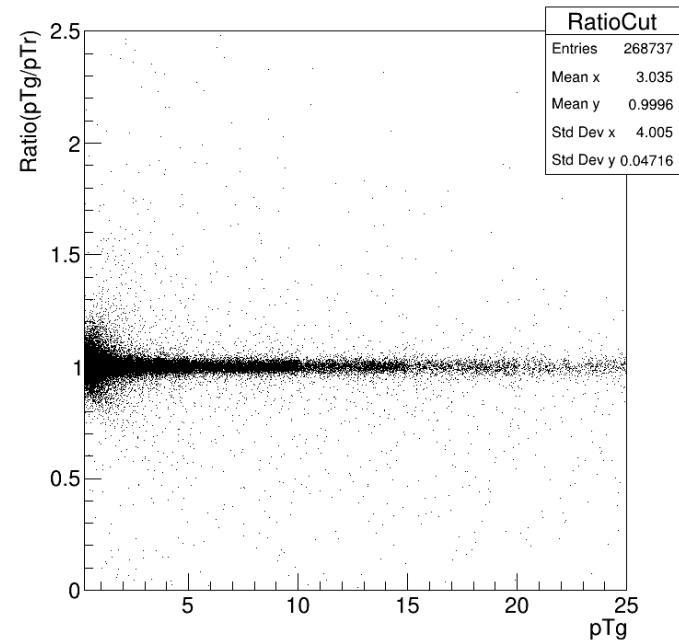
Fitted value of par[2]=Sigma



Ratio



Ratio Cut

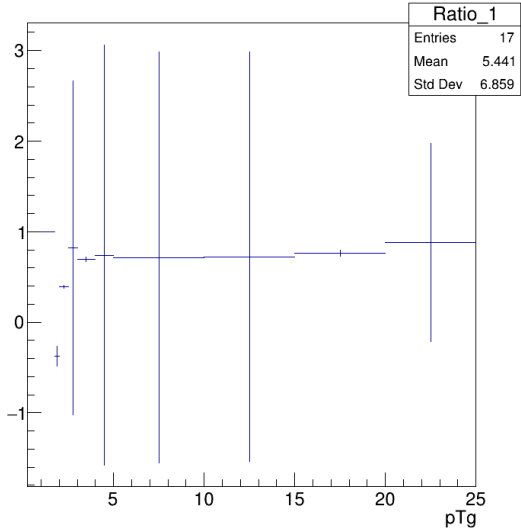


# Total – $-3 < \eta < 3$

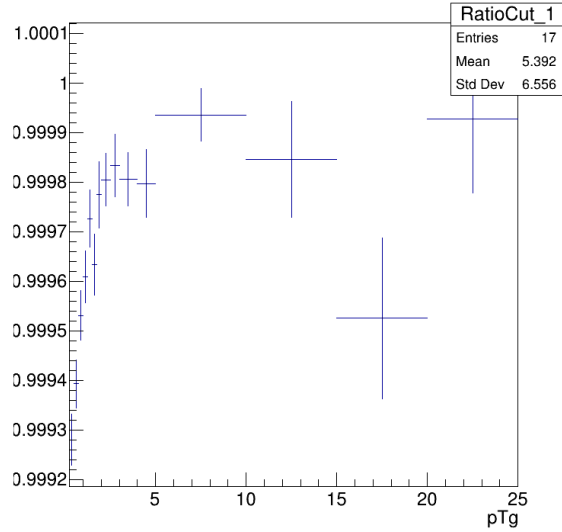
Mean

Sigma

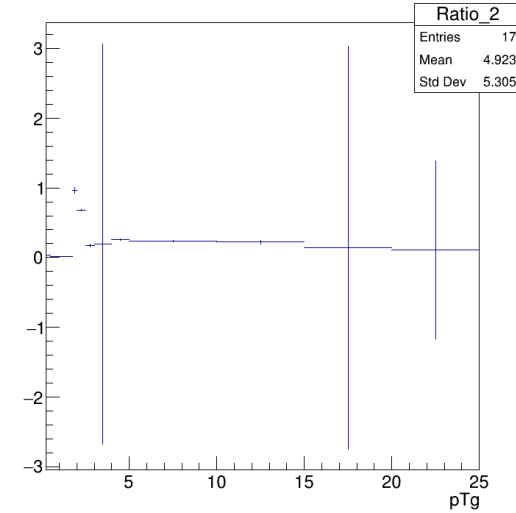
Fitted value of par[1]=Mean



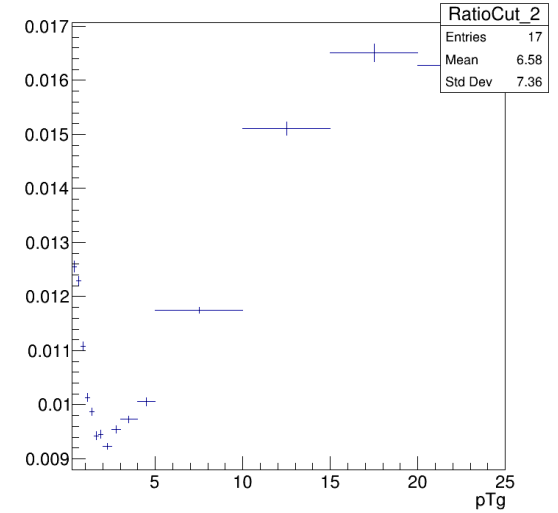
Fitted value of par[1]=Mean



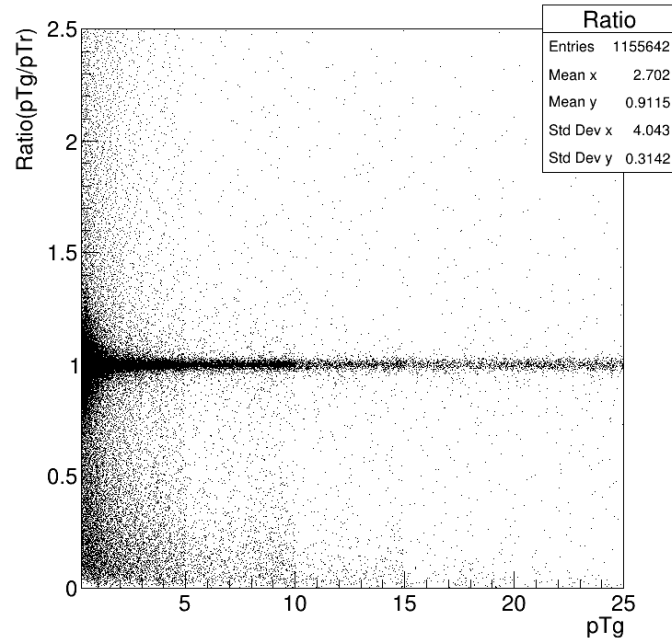
Fitted value of par[2]=Sigma



Fitted value of par[2]=Sigma



Ratio



Ratio Cut

