

01/10/2024

# Efficiencies and Particle Mass Reconstruction

Efrain Alvarado

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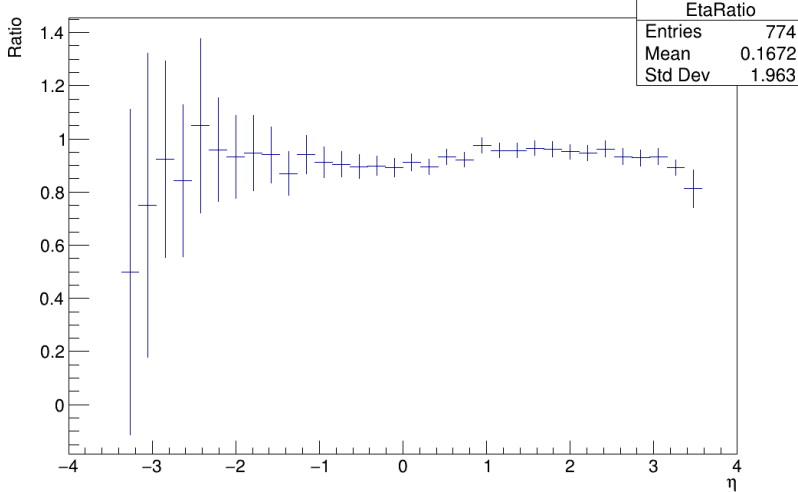




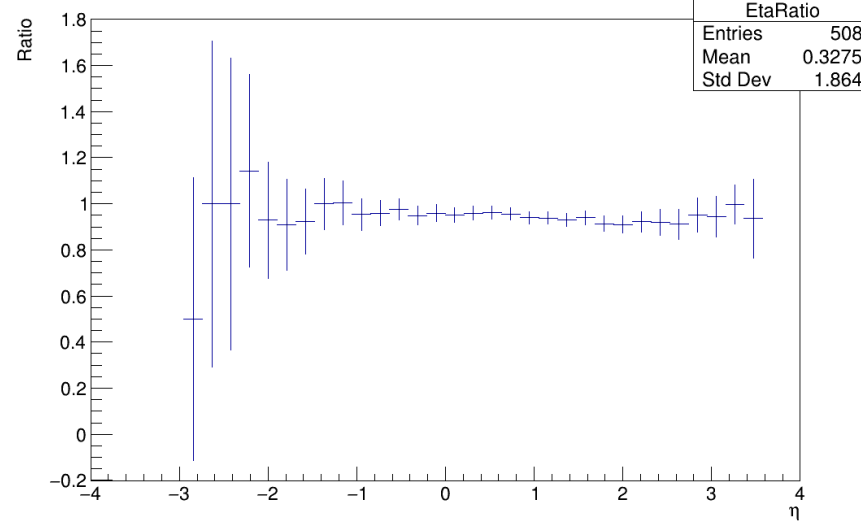
η Efficiencies

# All Particles - $\eta$ Efficiencies

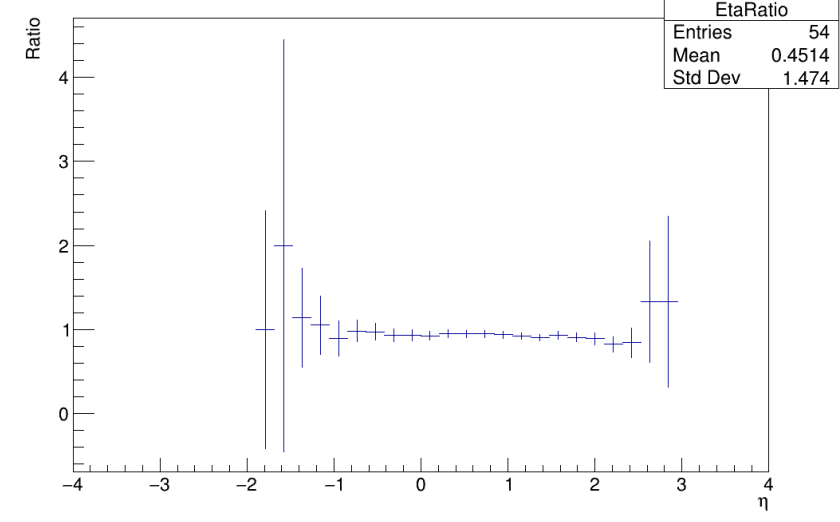
Ratio Eta, 0.3 GeV/c < pT < 0.6 GeV/c



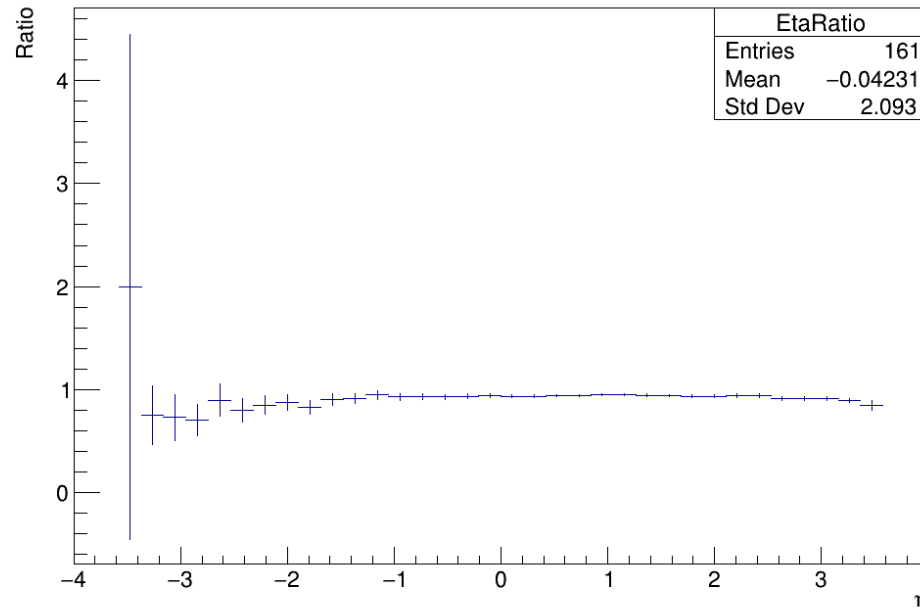
Ratio Eta, 1.0 GeV/c < pT < 2.0 GeV/c



Ratio Eta, 5.0 GeV/c < pT < 10.0 GeV/c

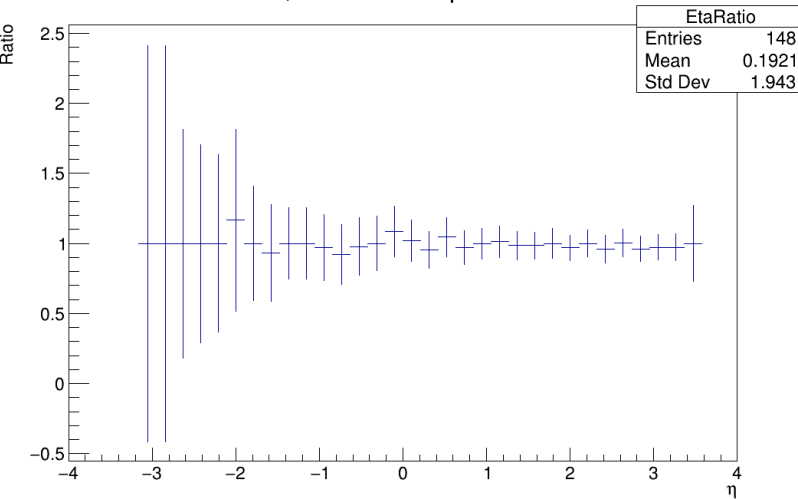


Ratio Eta, 0.0 GeV/c < pT < 20.0 GeV/c

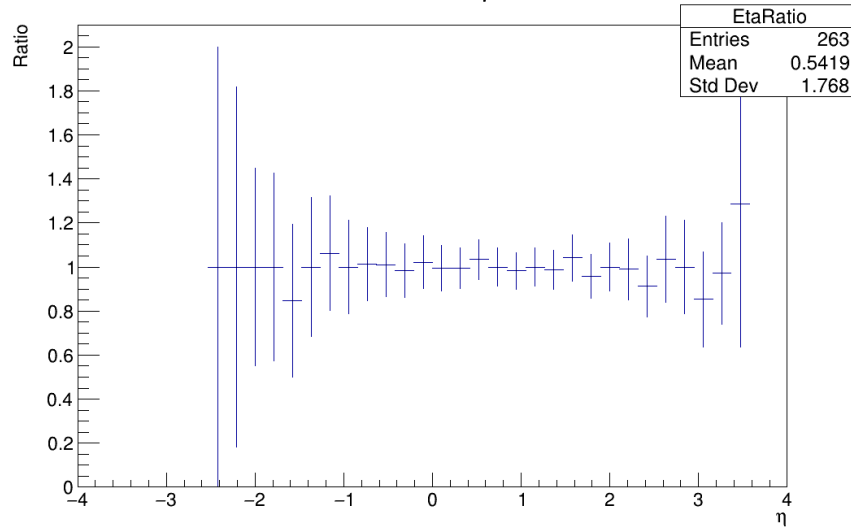


# Kaons - $\eta$ Efficiencies

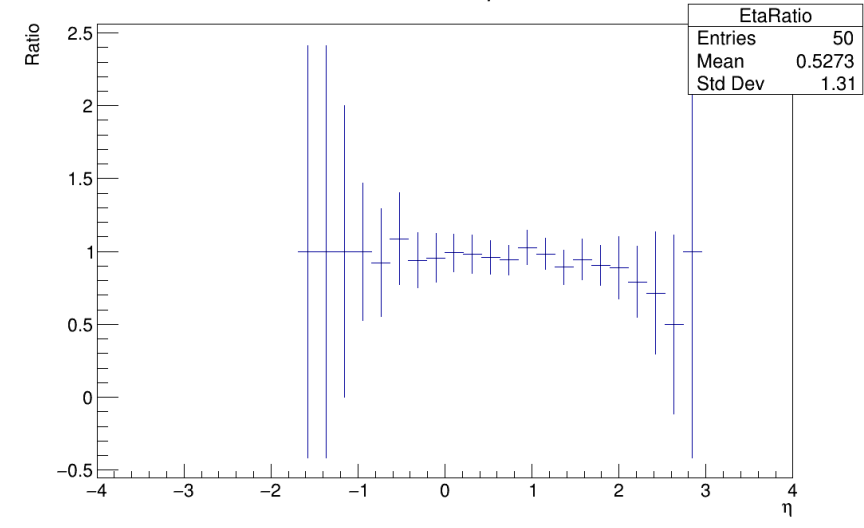
Ratio Eta, 0.3 GeV/c < pT < 0.6 GeV/c



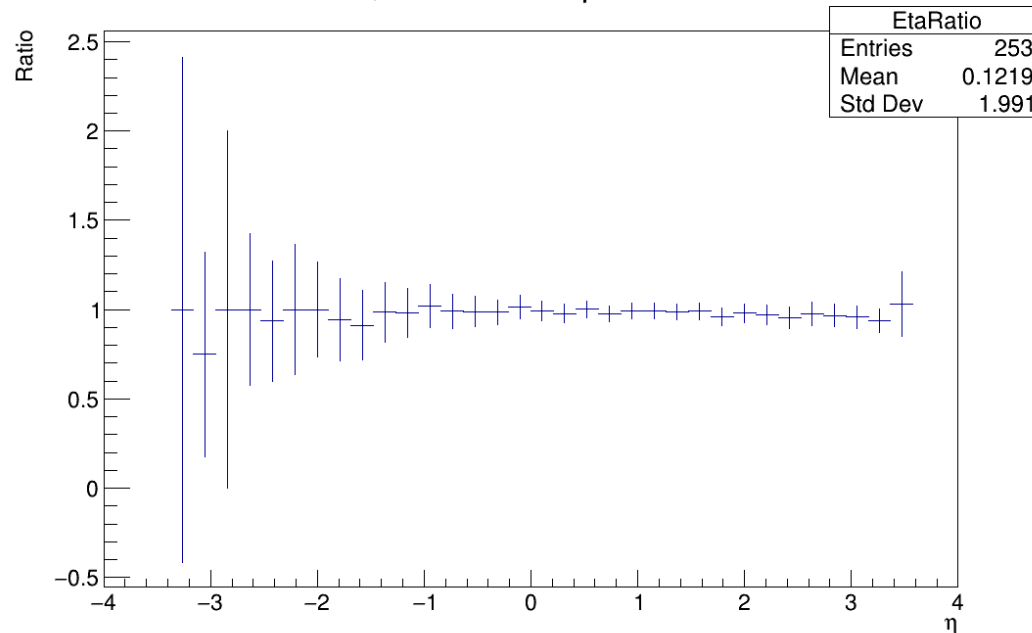
Ratio Eta, 1.0 GeV/c < pT < 2.0 GeV/c



Ratio Eta, 5.0 GeV/c < pT < 10.0 GeV/c

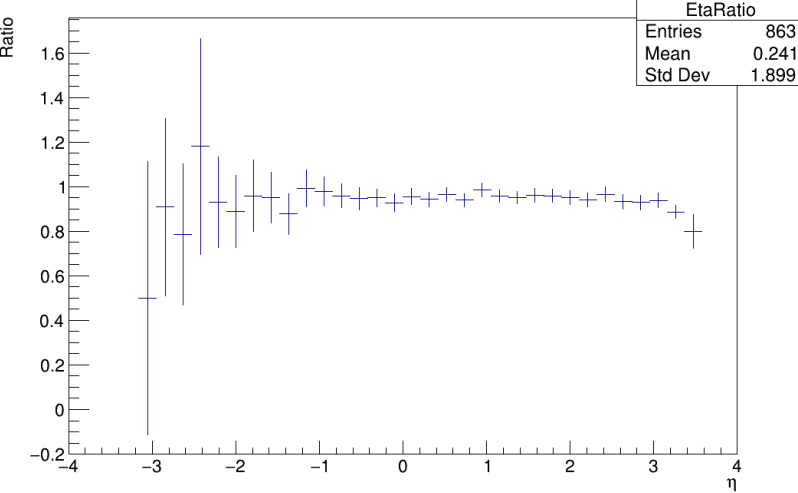


Ratio Eta, 0.0 GeV/c < pT < 20.0 GeV/c

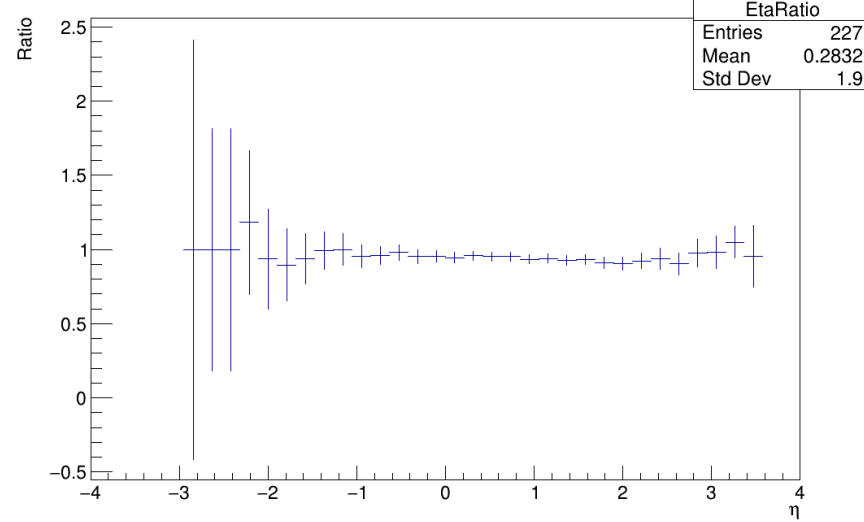


# Pions - $\eta$ Efficiencies

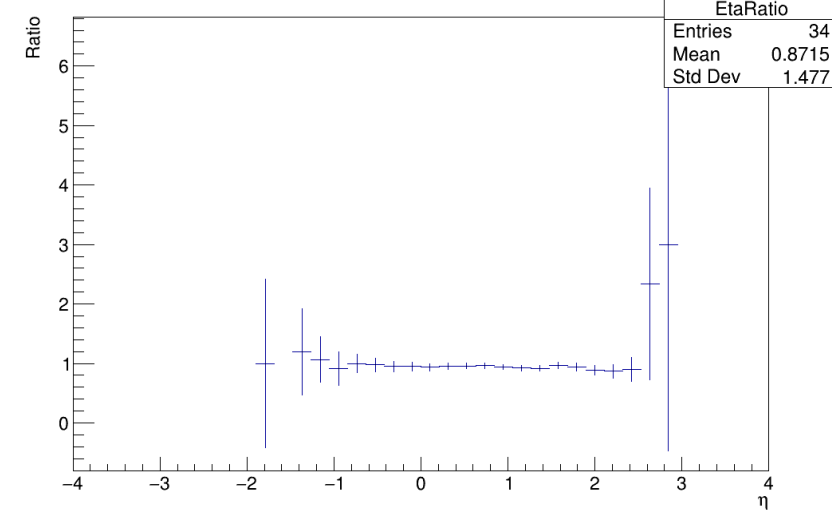
Ratio Eta, 0.3 GeV/c < pT < 0.6 GeV/c



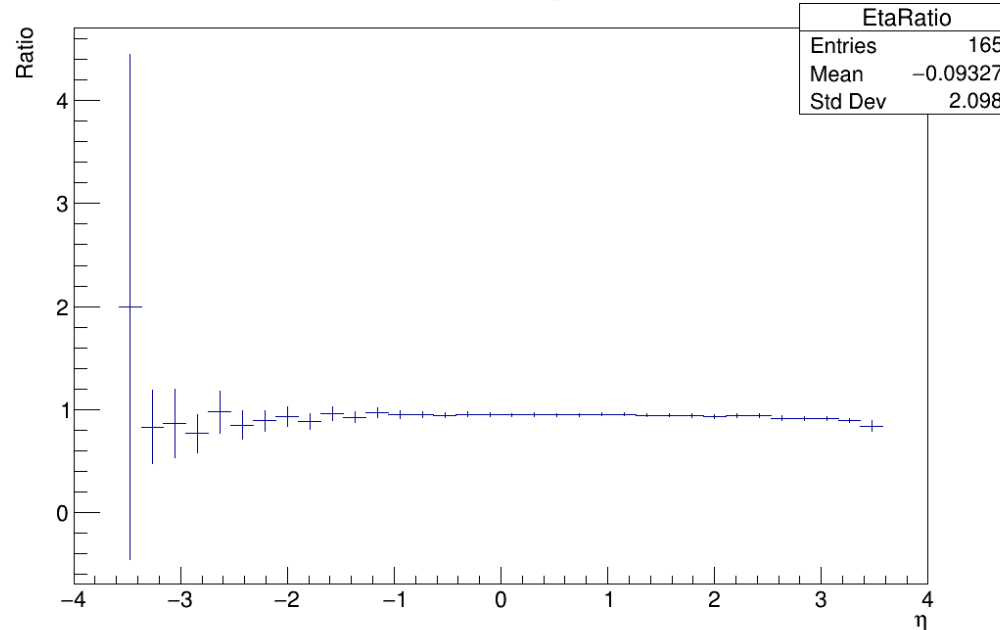
Ratio Eta, 1.0 GeV/c < pT < 2.0 GeV/c



Ratio Eta, 5.0 GeV/c < pT < 10.0 GeV/c

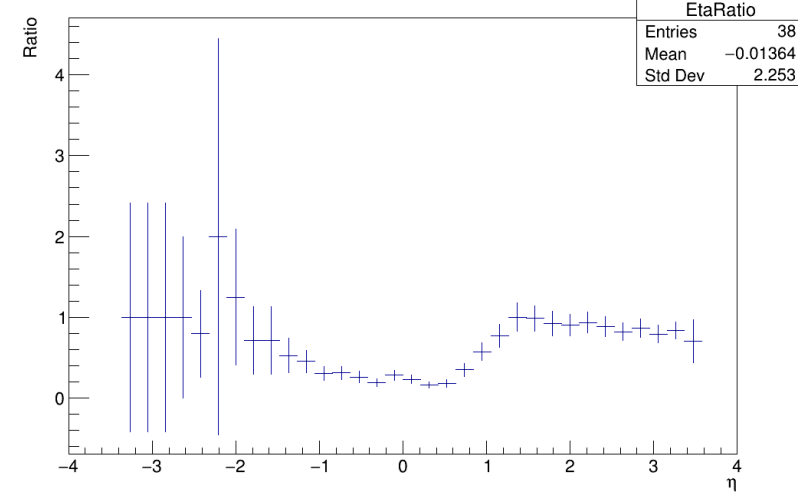


Ratio Eta, 0.0 GeV/c < pT < 20.0 GeV/c

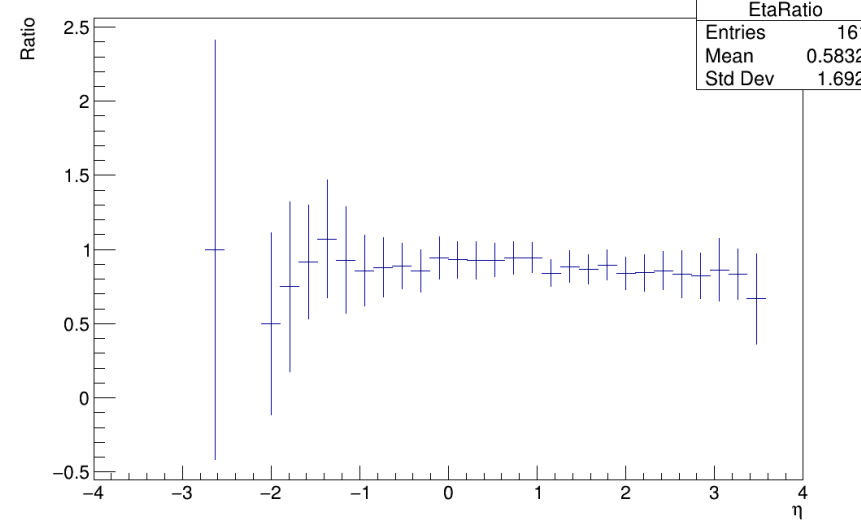


# Protons - $\eta$ Efficiencies

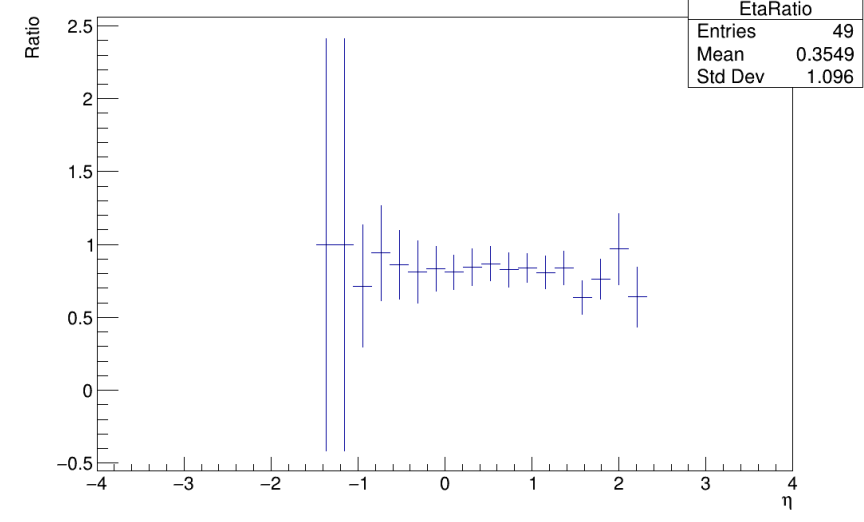
Ratio Eta, 0.3 GeV/c < pT < 0.6 GeV/c



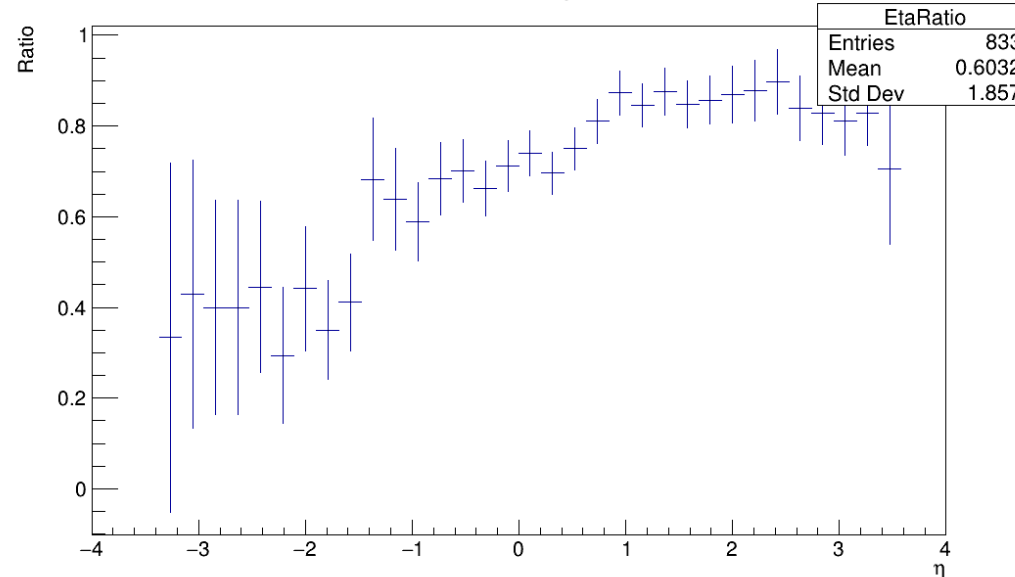
Ratio Eta, 1.0 GeV/c < pT < 2.0 GeV/c



Ratio Eta, 5.0 GeV/c < pT < 10.0 GeV/c



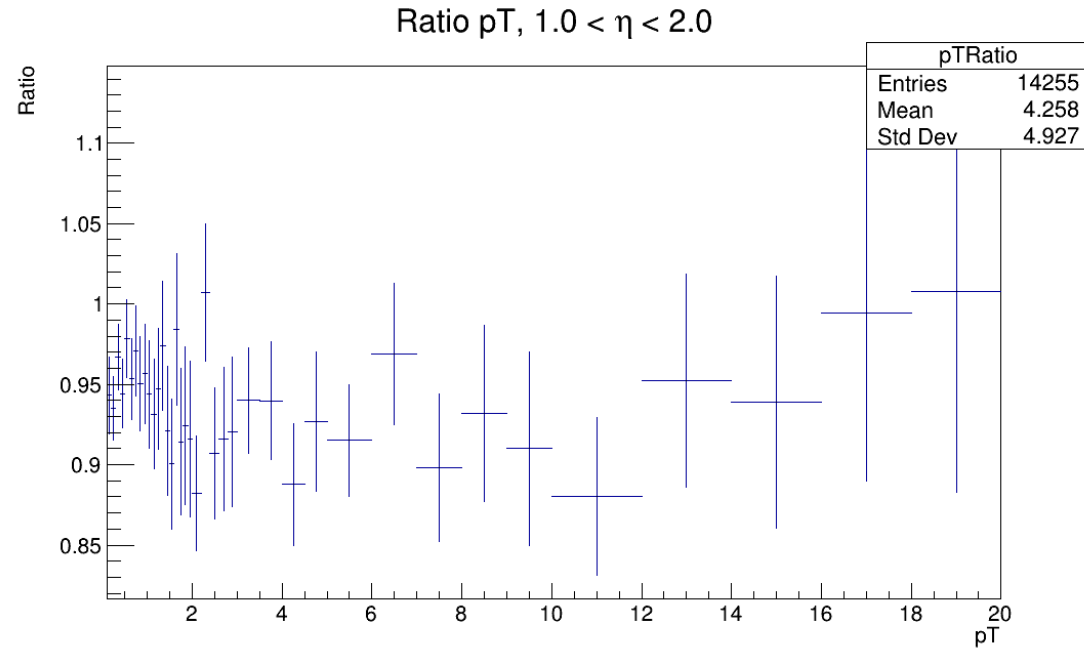
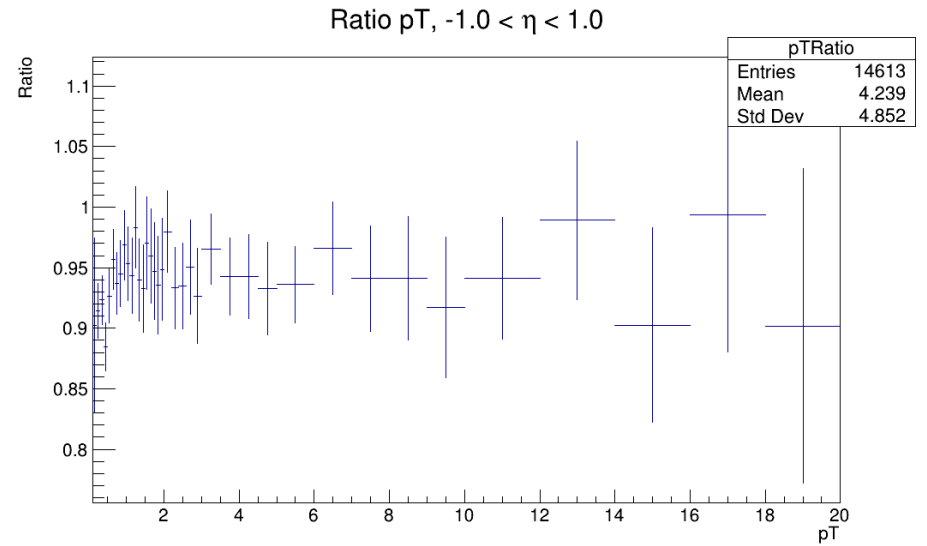
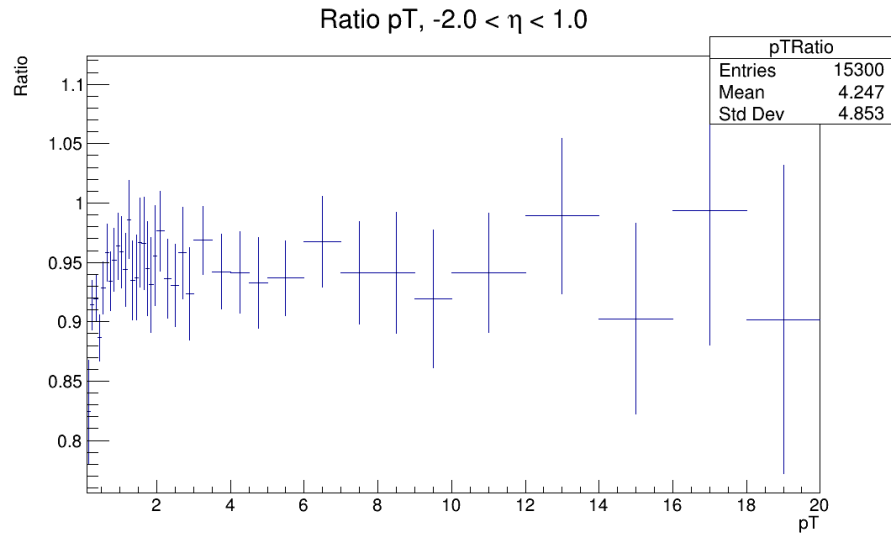
Ratio Eta, 0.0 GeV/c < pT < 20.0 GeV/c





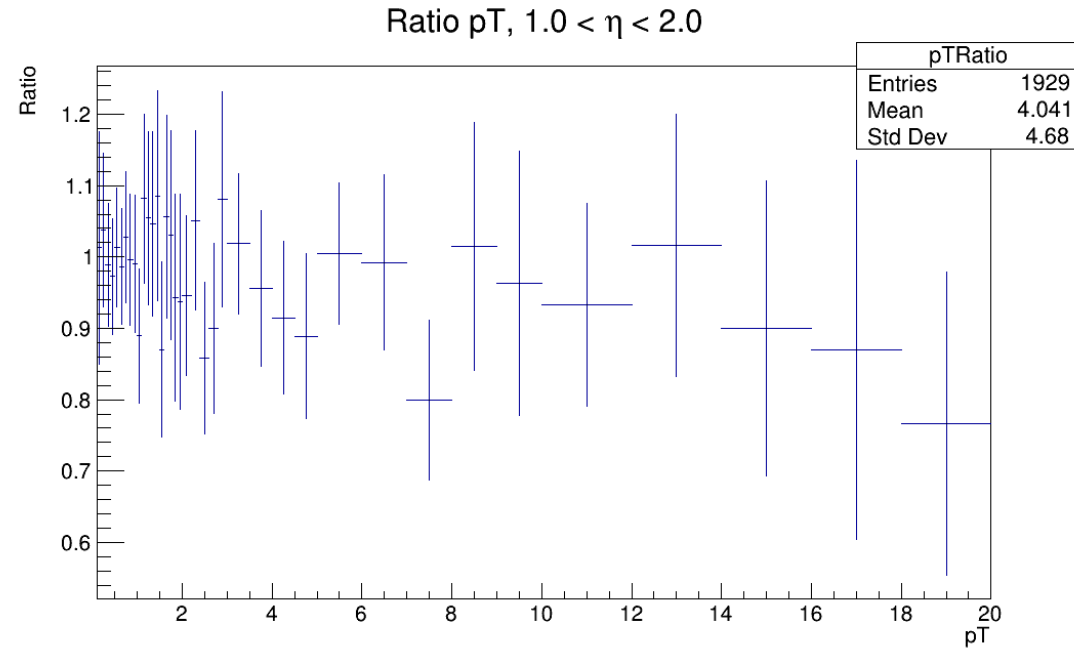
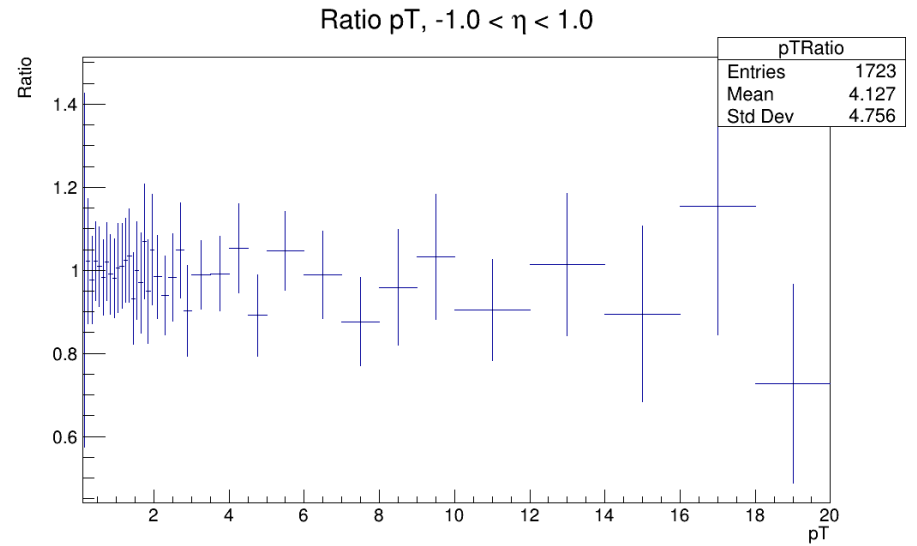
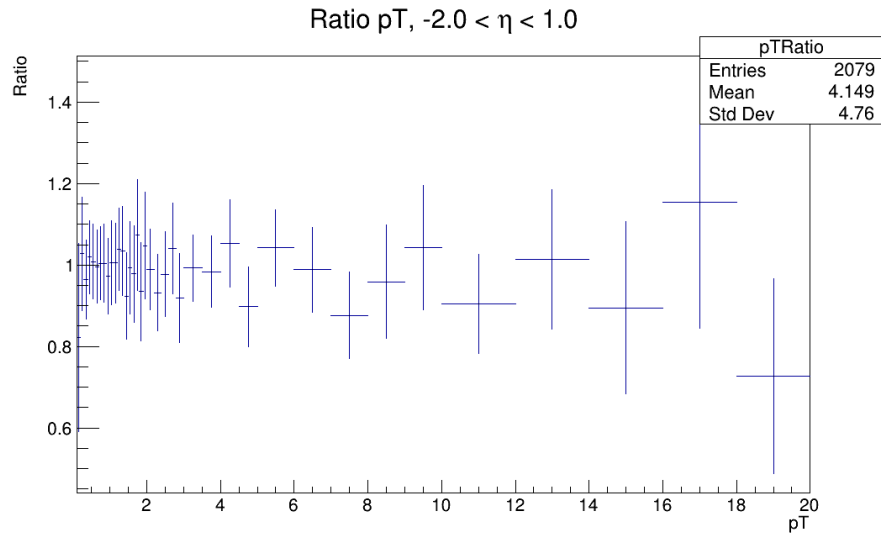
# pT Efficiencies

# All Particles - pT Efficiencies

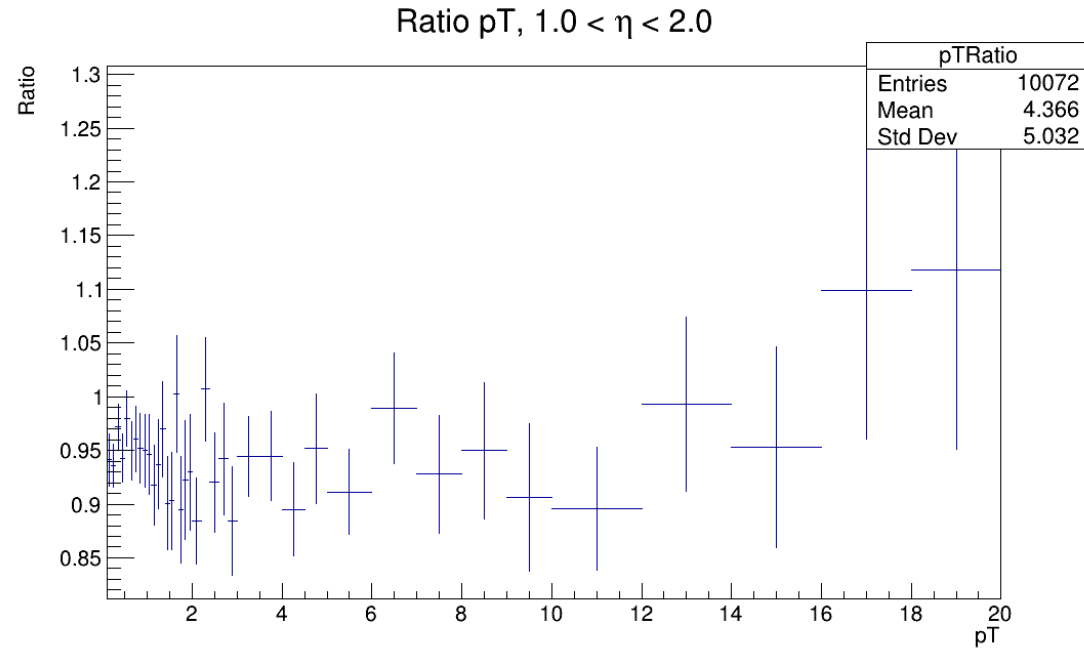
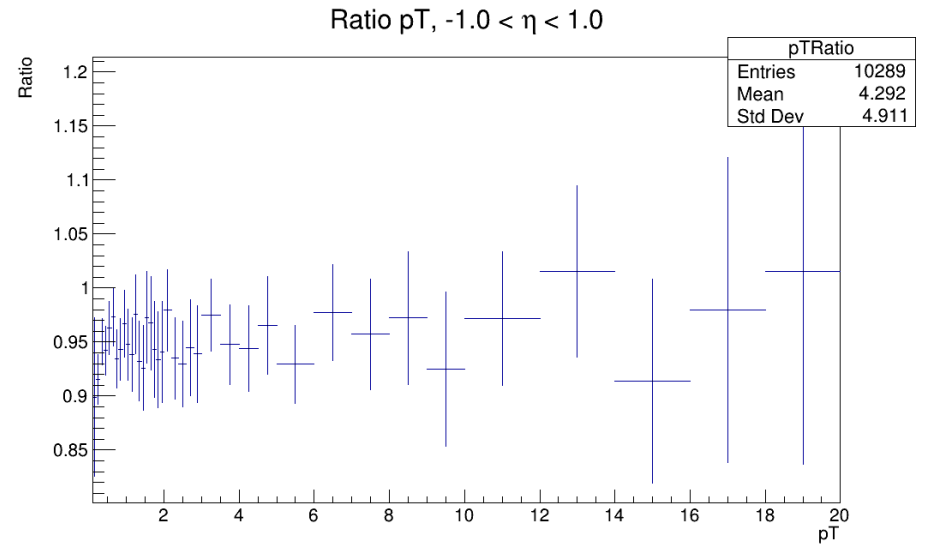
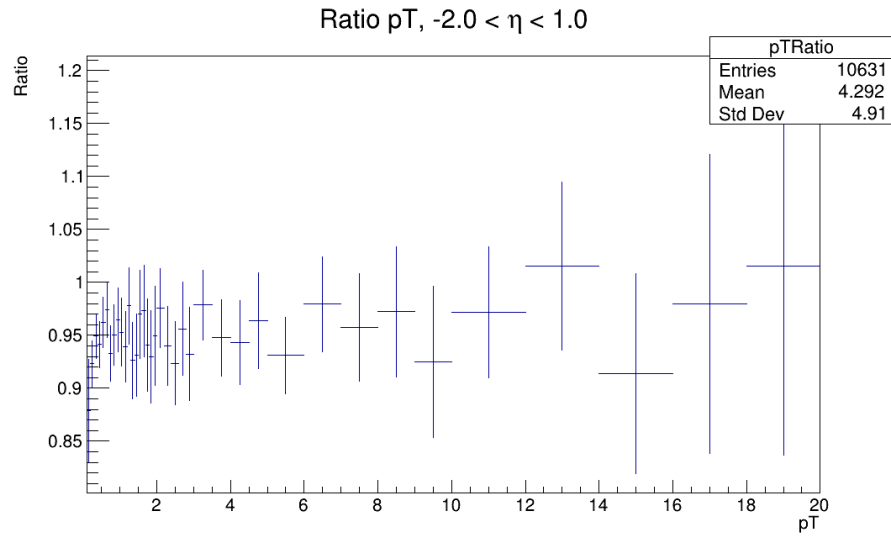




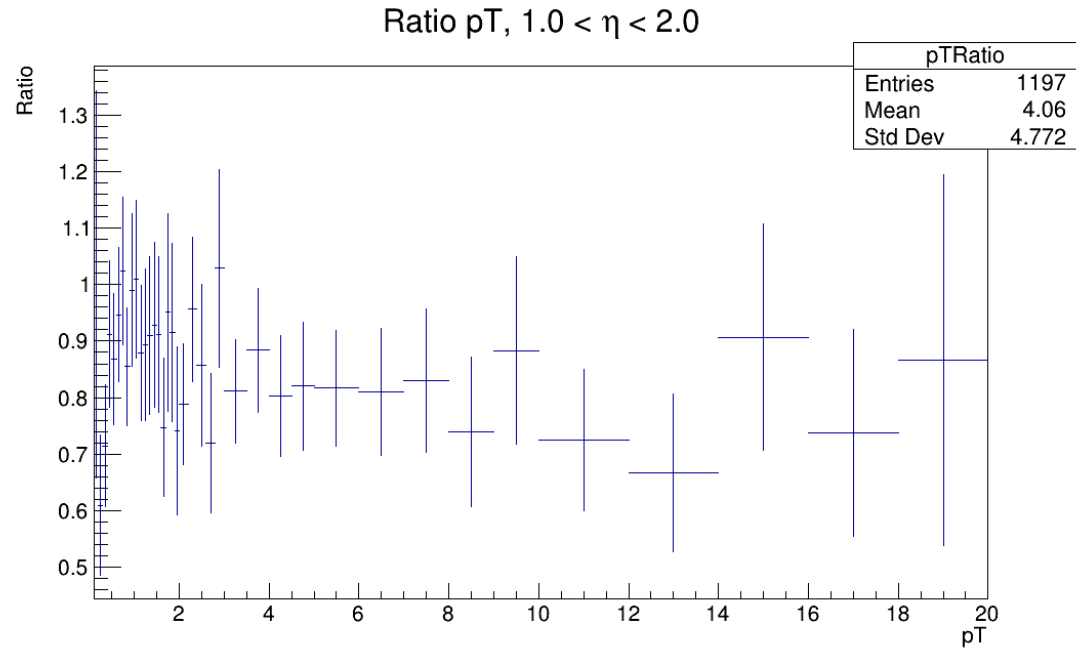
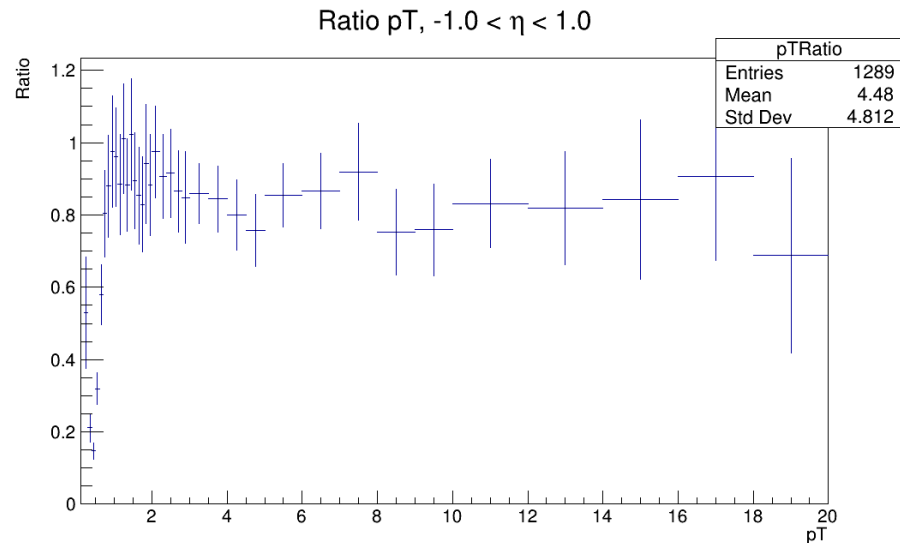
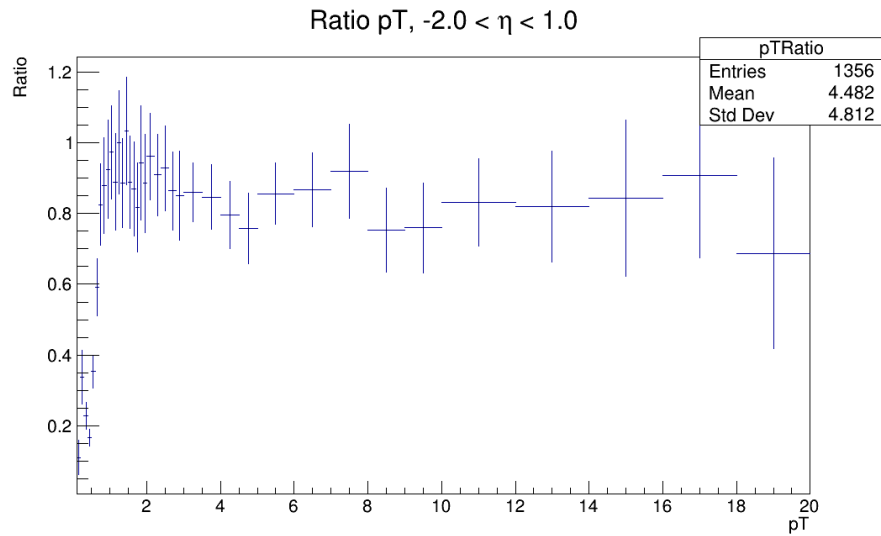
# Kaons - pT Efficiencies



# Pions - pT Efficiencies



# Protons - pT Efficiencies



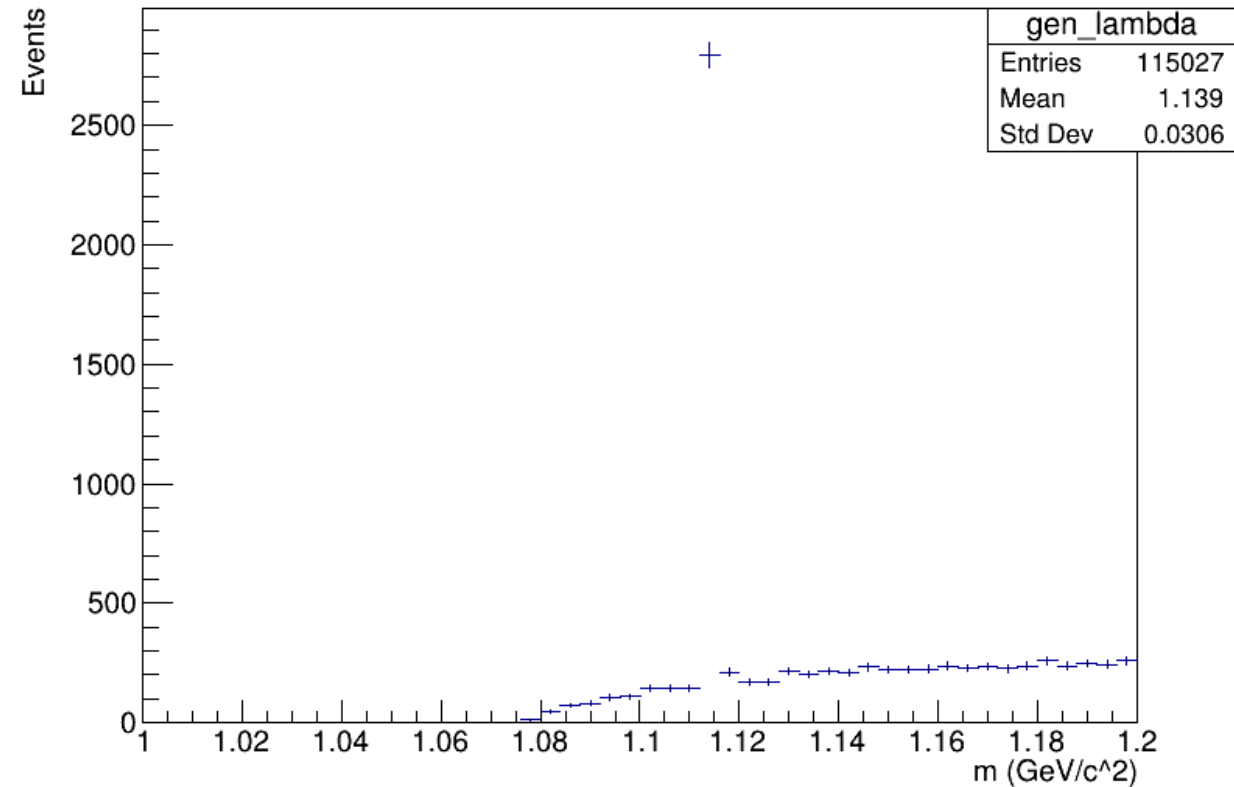
An aerial photograph of a university campus, overlaid with a semi-transparent blue filter. The image shows a large, multi-level plaza with many people walking. There are several trees and buildings visible. The text "Mass Reconstruction" is centered in white, bold font.

# Mass Reconstruction

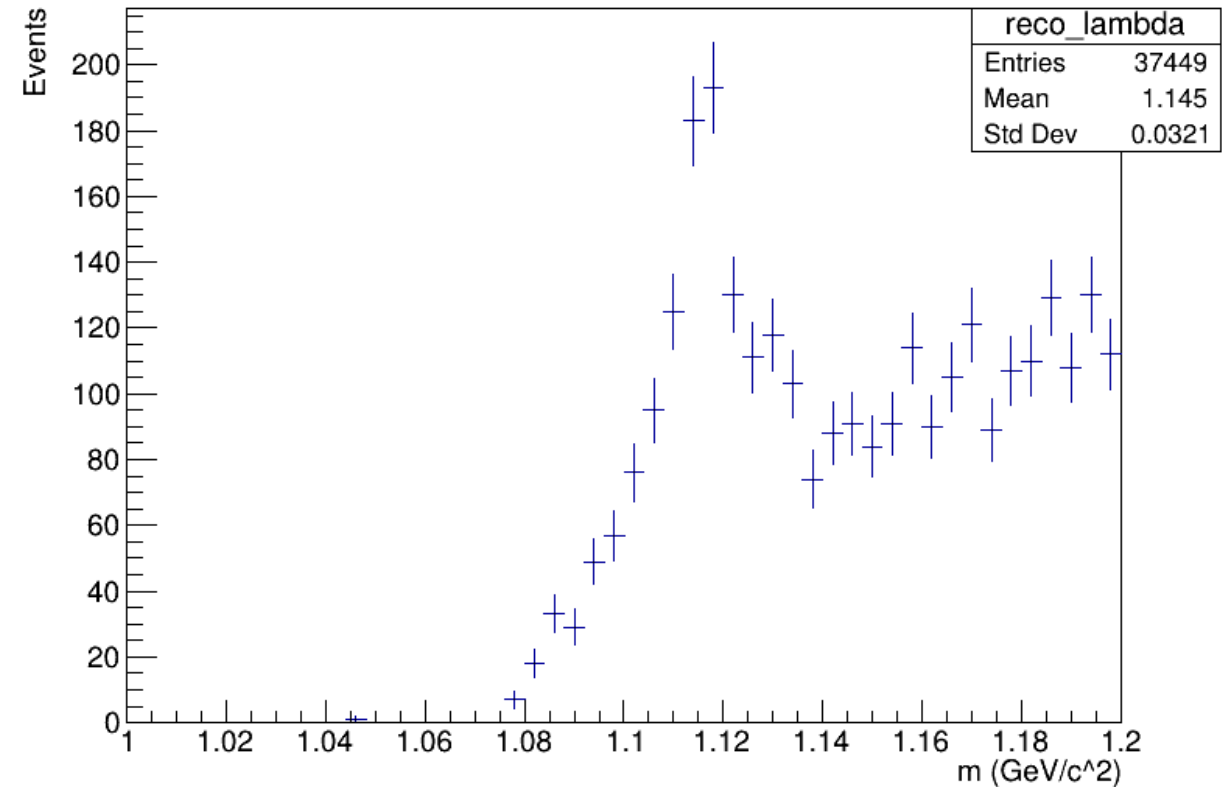
# Lambda Mass Reconstruction

Expected mass  $\sim 1.116 \text{ GeV}/c^2$

Generated Particles- $\lambda$  Mass Reconstruction



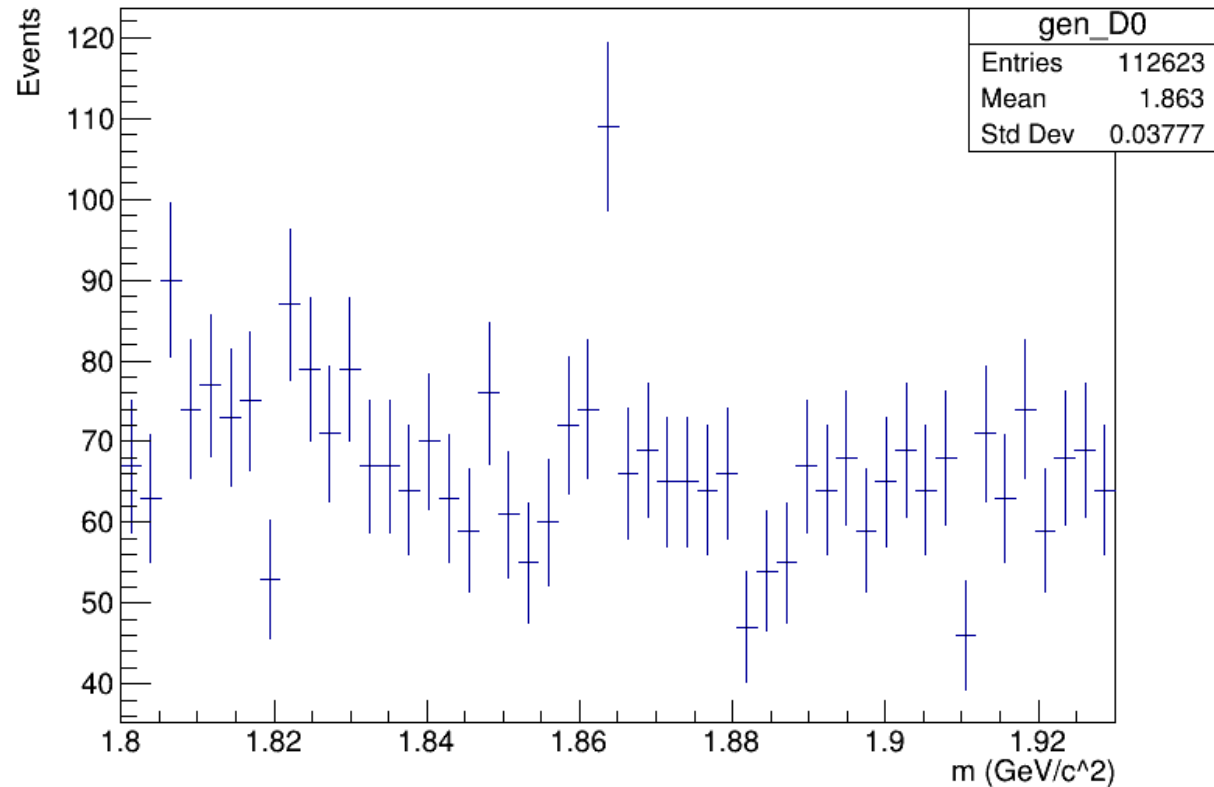
Reconstructed Particles- $\lambda$  Mass Reconstruction



# D0 Mass Reconstruction

Expected mass  $\sim 1.864 \text{ GeV}/c^2$

Generated Particles-D0 Mass Reconstruction



Reconstructed Particles-D0 Mass Reconstruction

