EIC Simulation Data Details

- Downloaded from the S3 directory on a web browser

File path:
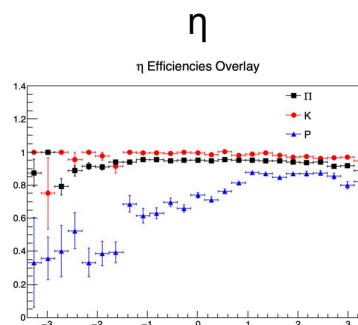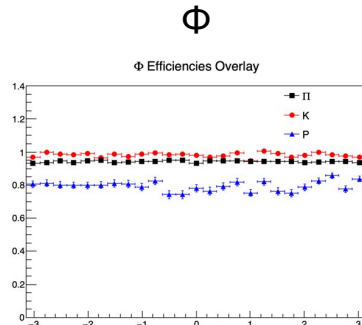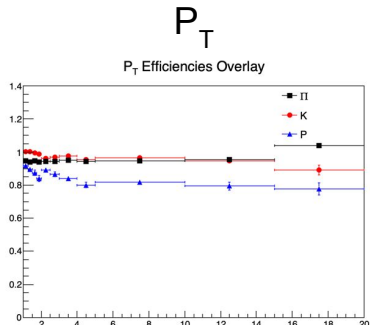eictest/EPIC/RECO/23.05.2/epic_brycecanyon/DIS/NC/18x275/minQ2=1000

- First two hundred files are being used for analysis
  - Using hadd the many root files were made into a single root file
- Efficiencies of pT, Phi, and Eta for the ReconstructedChargedParticles branch data with respect to the GeneratedParticles branch data in the file type
- The type of particle for each entry was sorted by mass, and the data here includes pions, kaons, and protons

Efficiencies of P_T, η, and Φ for particles by type & charge
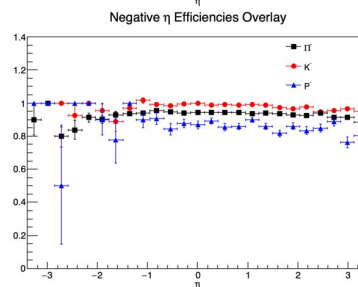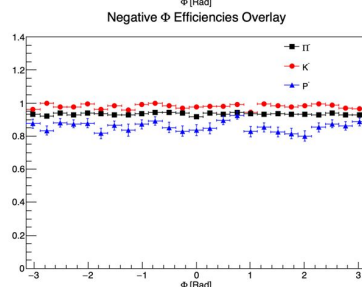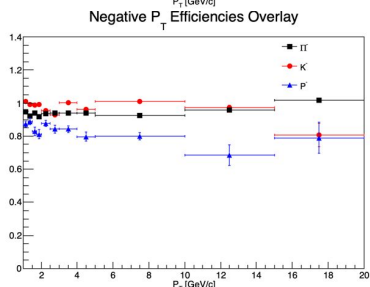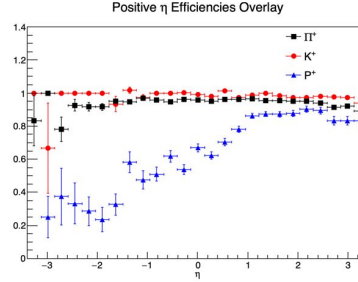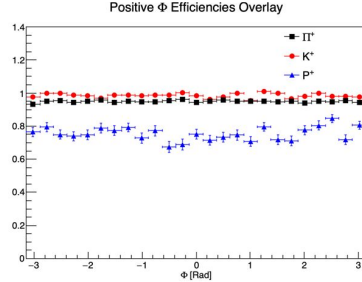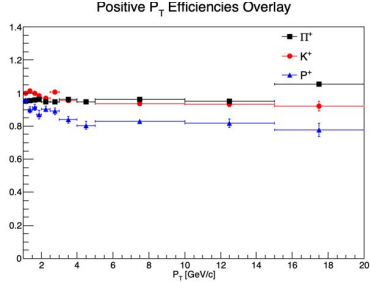(reco particle type and charge type / gen particle type and charge type)

Cuts

P > 0.25 GeV/c
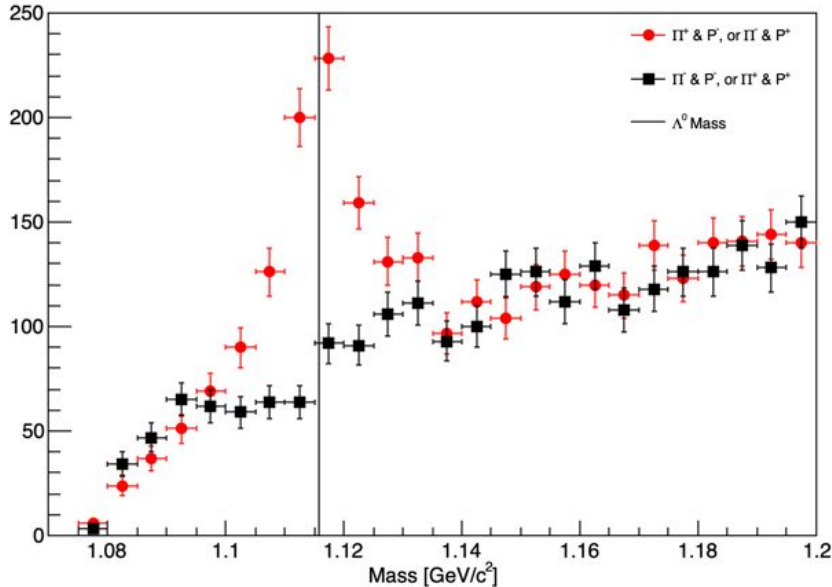
|η| < 3.4

Charged particles only

Λ^0 Mass Reconstruction

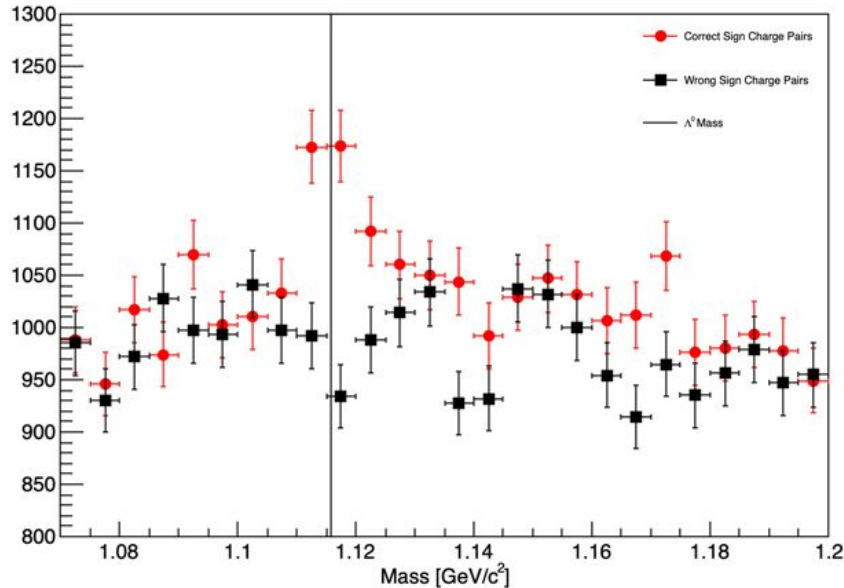Λ^0 Mass Reconstruction Overlay

- Histogram of Λ^0 reconstruction masses
  - π^- & P^+ or π^+ & P^- pairs
  - π momentum < P momentum
- Overlay histogram of reconstruction masses with wrong sign charge pairs
  - π^- & P^- or π^+ & P^+ pairs

Alternate Λ^0 Mass Reconstruction

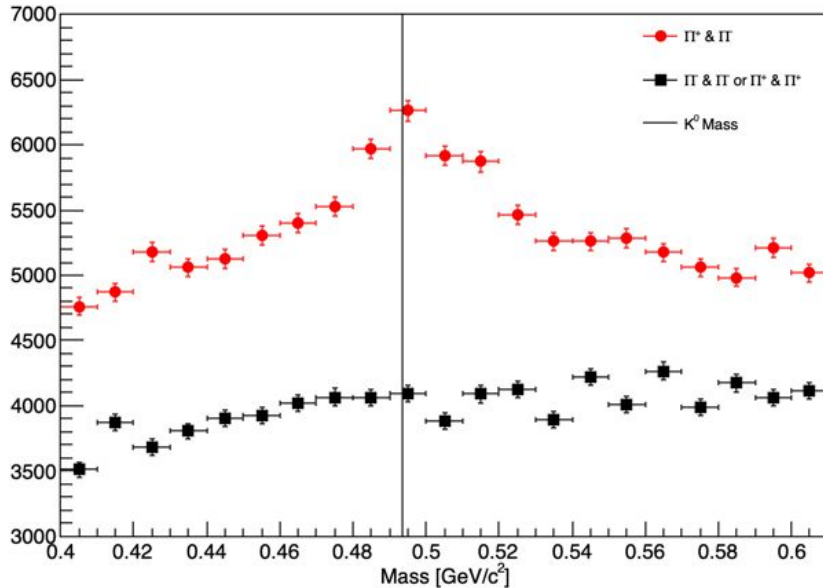Alternate Λ^0 Mass Reconstruction Overlay

- Histogram of alternate Λ^0 reconstruction masses
  - Momentum of first particle > twice the momentum of the second particle
  - The first and second particle each had an opposite sign charge to each other
- Overlay histogram of reconstruction masses with wrong sign charge pairs
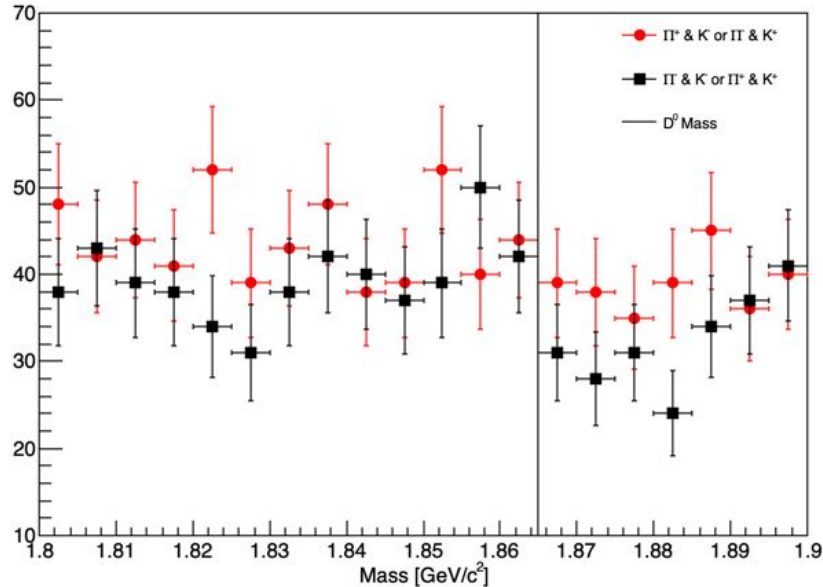 - π^- & P^- or π^+ & P^+ pairs

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K^0 Mass Reconstruction

- Histogram of K^0 reconstruction masses
  - π$^+$ & π$^-$ pairs
- Overlay histogram of reconstruction masses with wrong sign charge pairs
  - π$^-$ & π$^-$ or π$^+$ & π$^+$ pairs

D^0 Mass Reconstruction

- Histogram of D^0 reconstruction masses
  - π^+ & K$^-$ or π^- & K$^+$ pairs
- Overlay histogram of reconstruction masses with wrong sign charge pairs
  - π^- & K$^-$ or π^+ & K$^+$ pairs