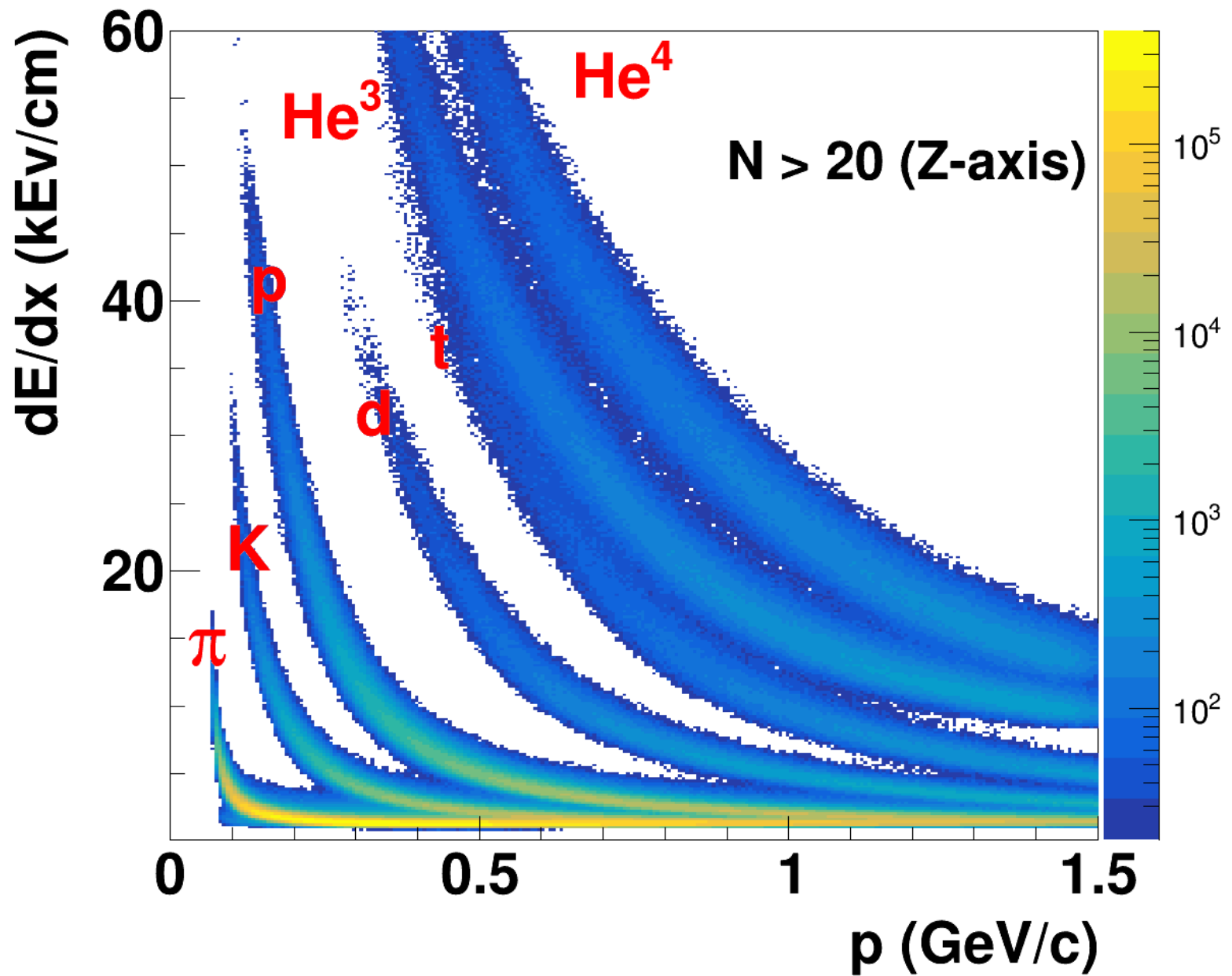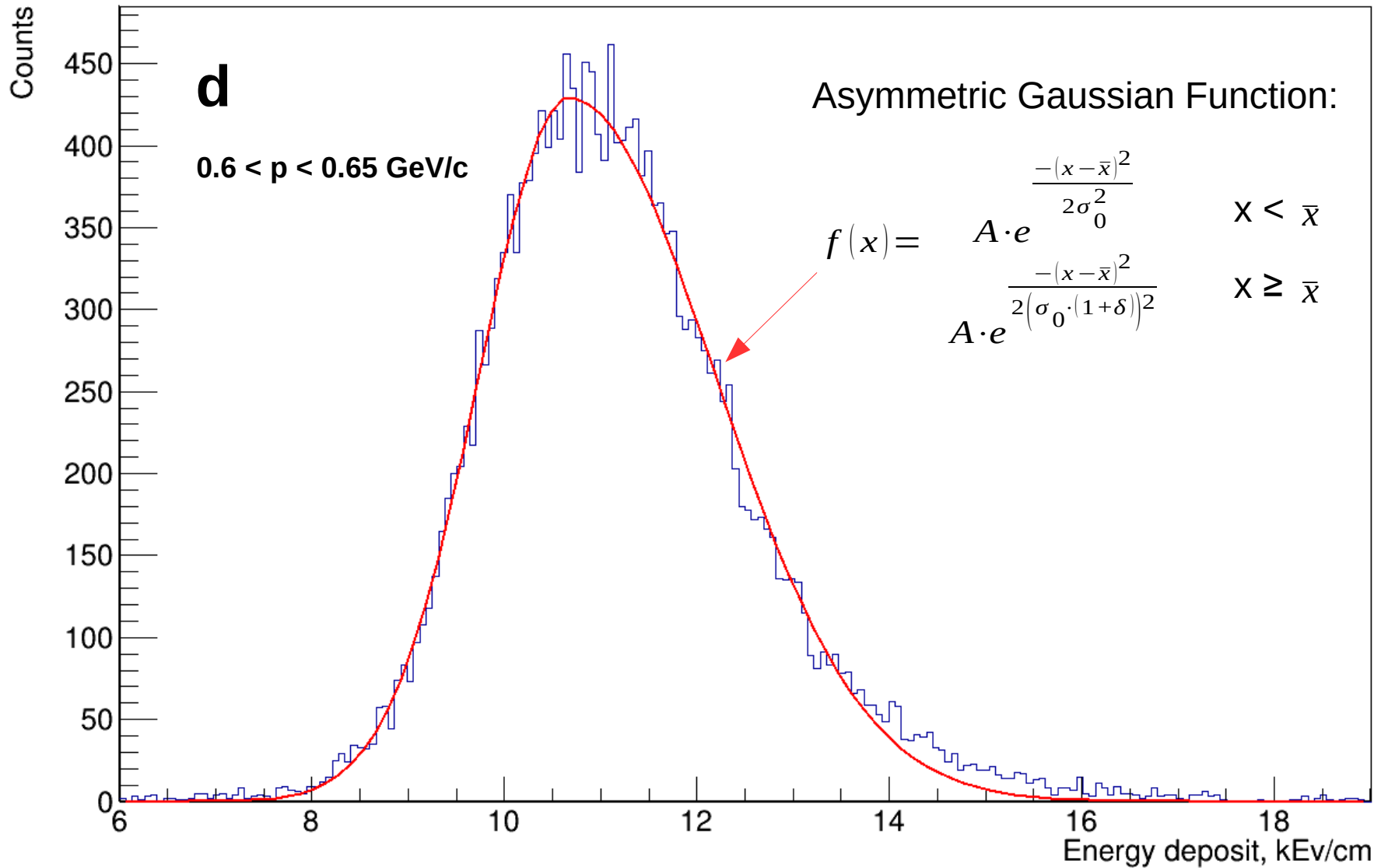# Data set

- **PHQMD simulation at 8.8 GeV (199k events) + BOX generator (10 d, 10 t, 10 He^3 and 10 He^4 per event)**

- **Primary Particles (via GEANT)**

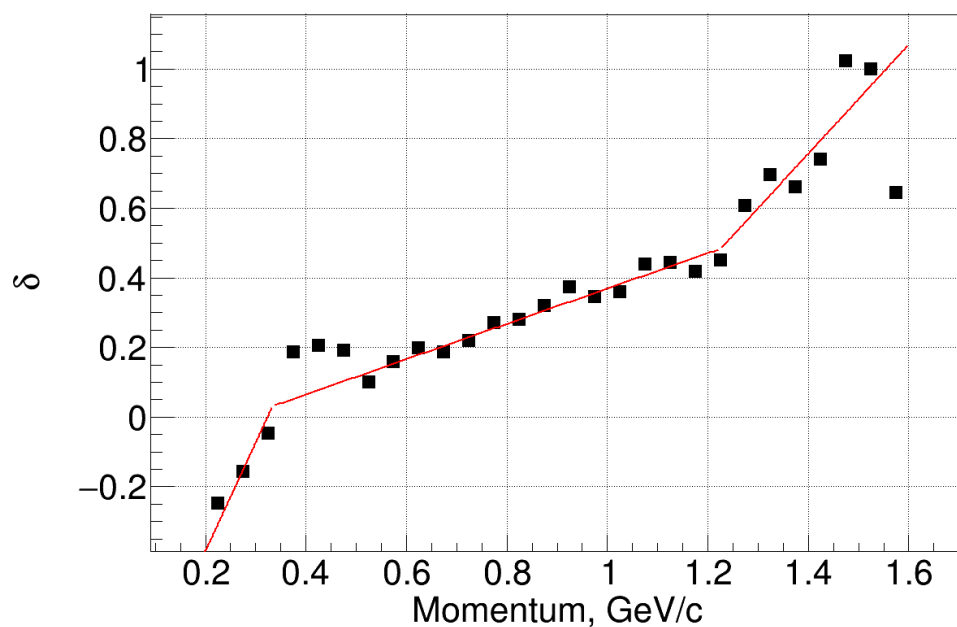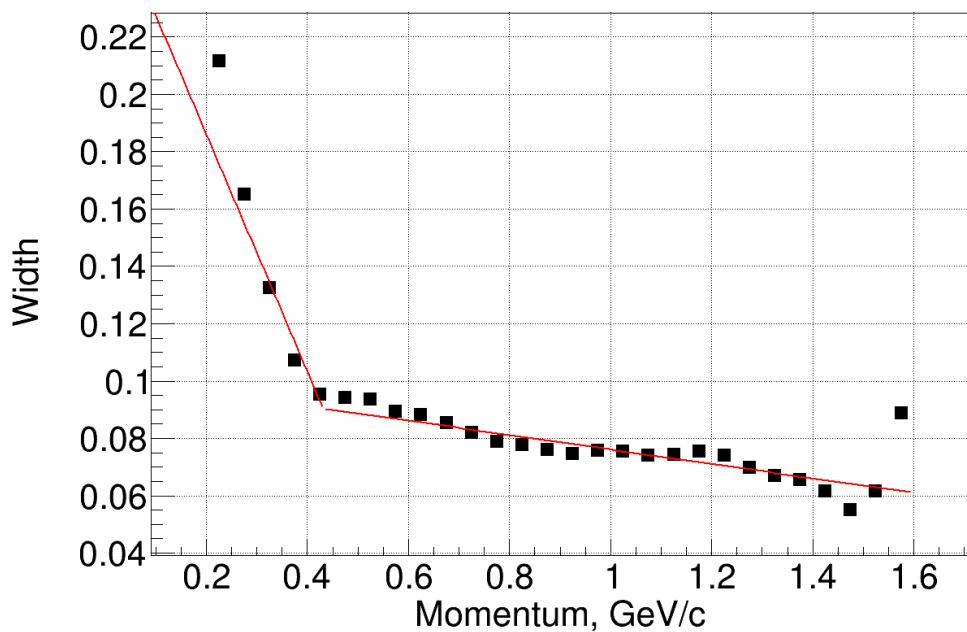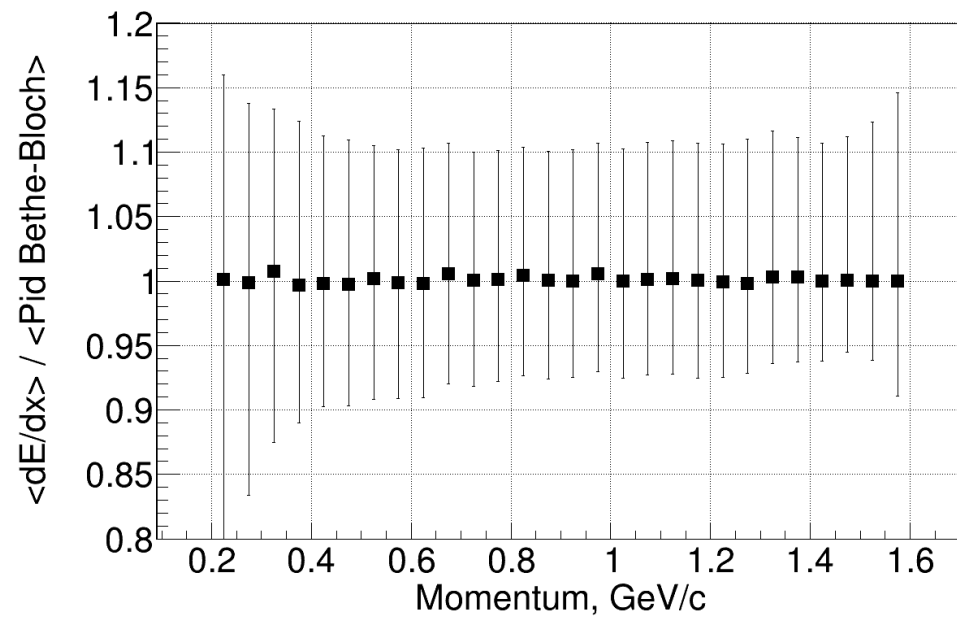- **$N_{hits} \geq 20$**

- **$| \eta | < 1.3$**
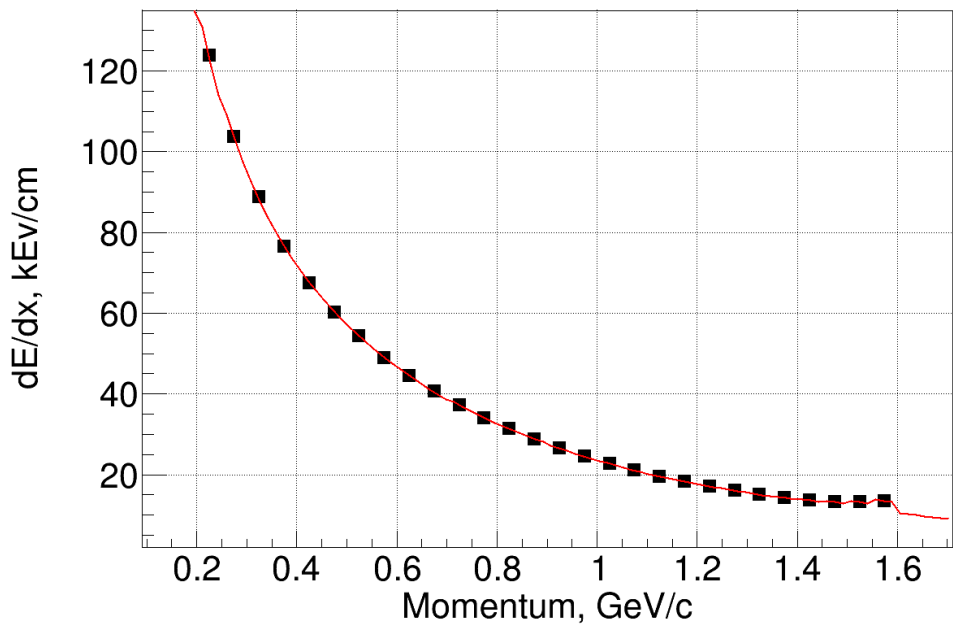
dE/dx VS p

dE/dx VS p — Plot of dE/dx (kEv/cm) versus p (GeV/c). Labeled bands: π, K, p, He^3, d, t, He^4. Text on plot: N > 20 (Z-axis). Color scale (Z-axis): 10^2, 10^3, 10^4, 10^5.

dE/dx VS p

d

0.6 < p < 0.65 GeV/c

Asymmetric Gaussian Function:

$$f(x)= \begin{cases} A \cdot e^{\frac{-(x-\bar{x})^2}{2\sigma_0^2}} & x < \bar{x} \\ A \cdot e^{\frac{-(x-\bar{x})^2}{2\left(\sigma_0 \cdot (1+\delta)\right)^2}} & x \geq \bar{x} \end{cases}$$

Counts

Energy deposit, kEv/cm

He⁴

He³
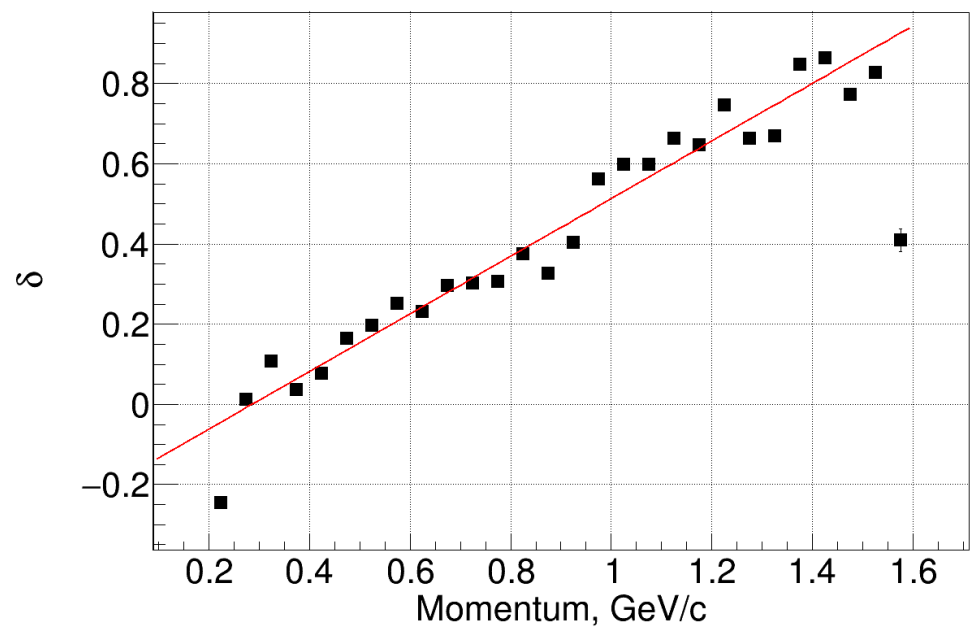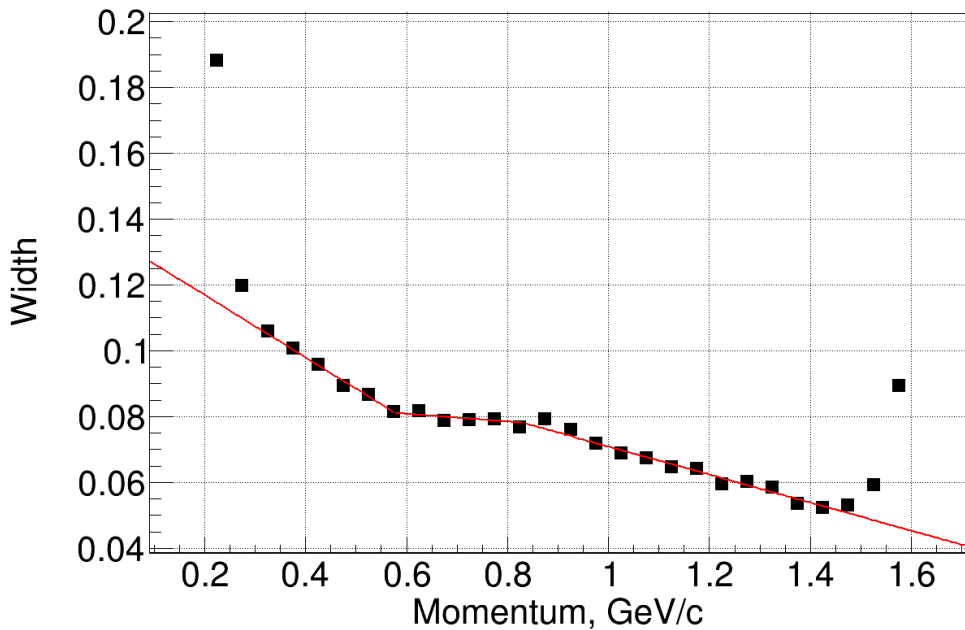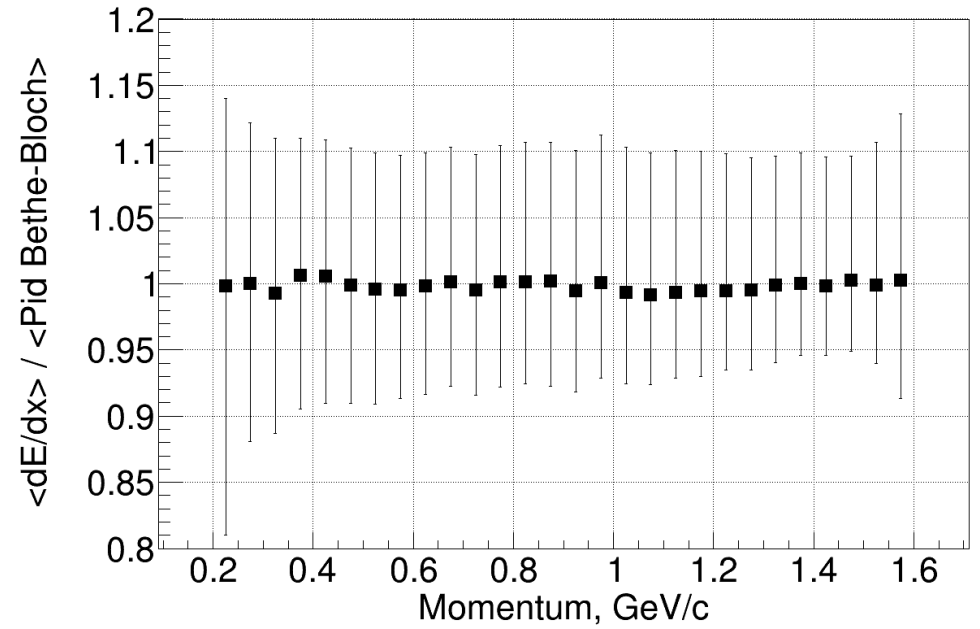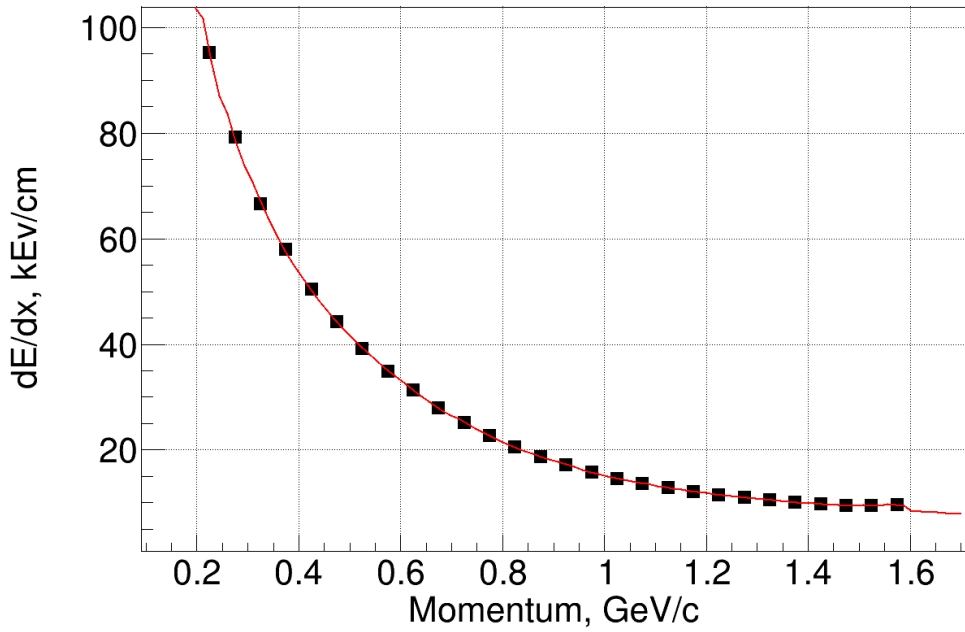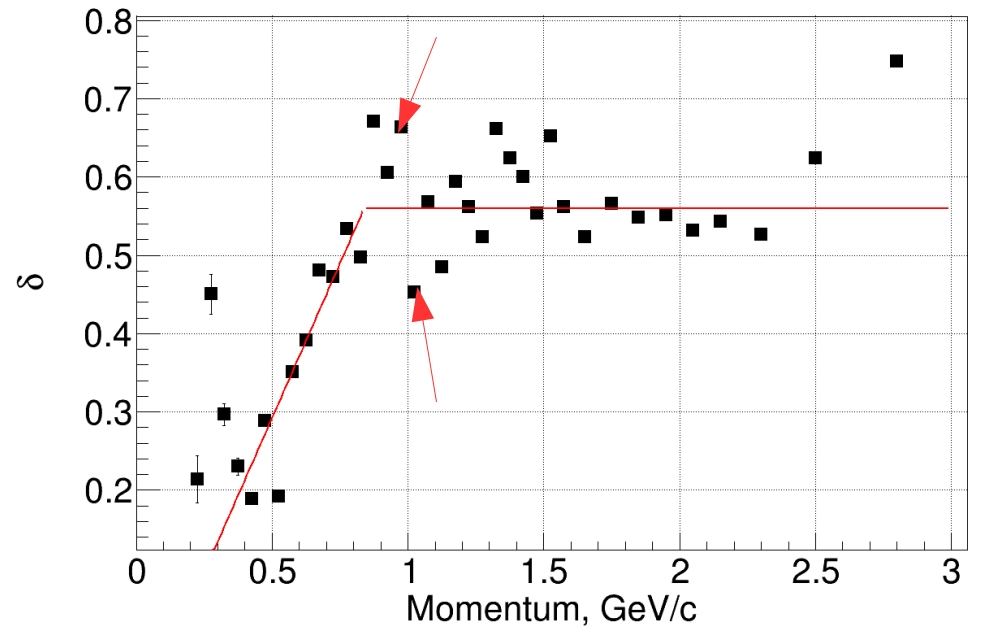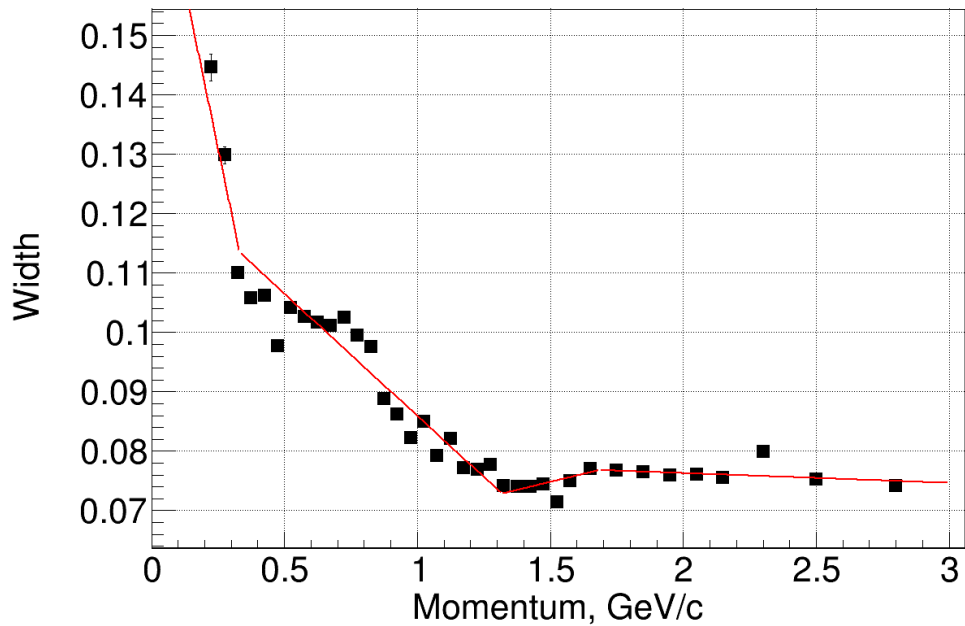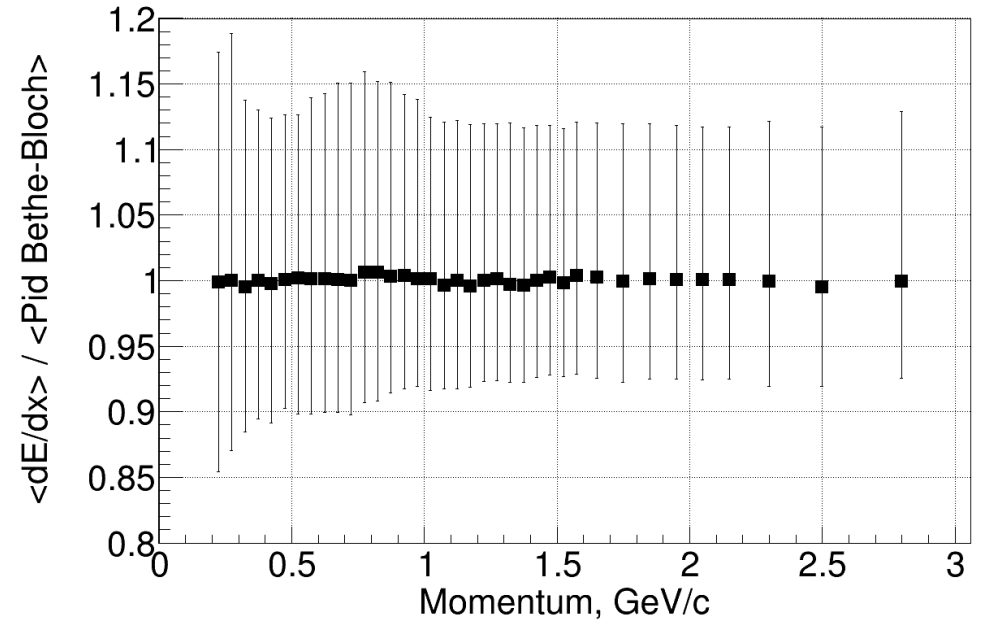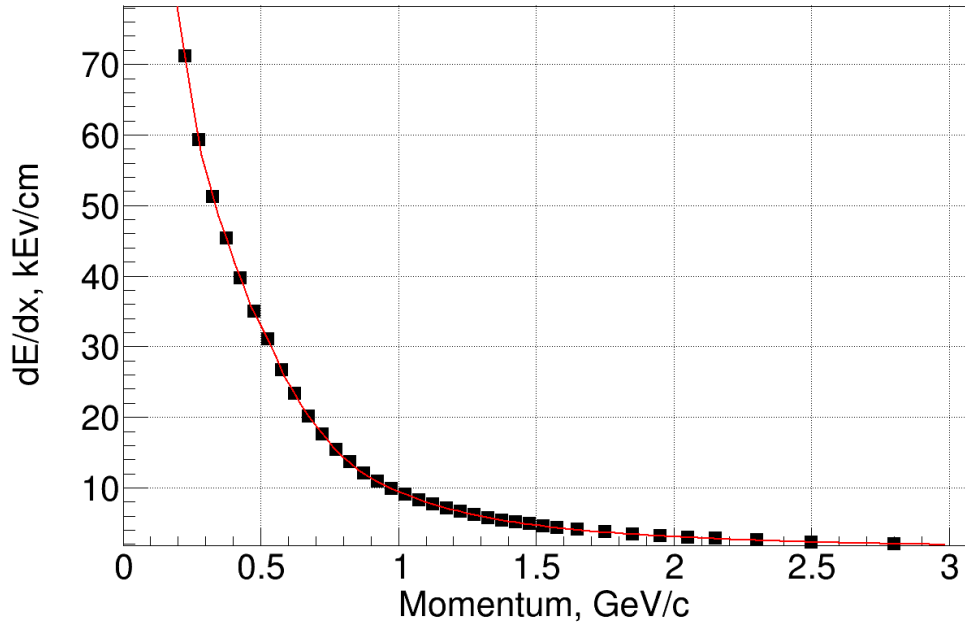
Tritons

Tritons

0.95 < p < 1.00 GeV/c
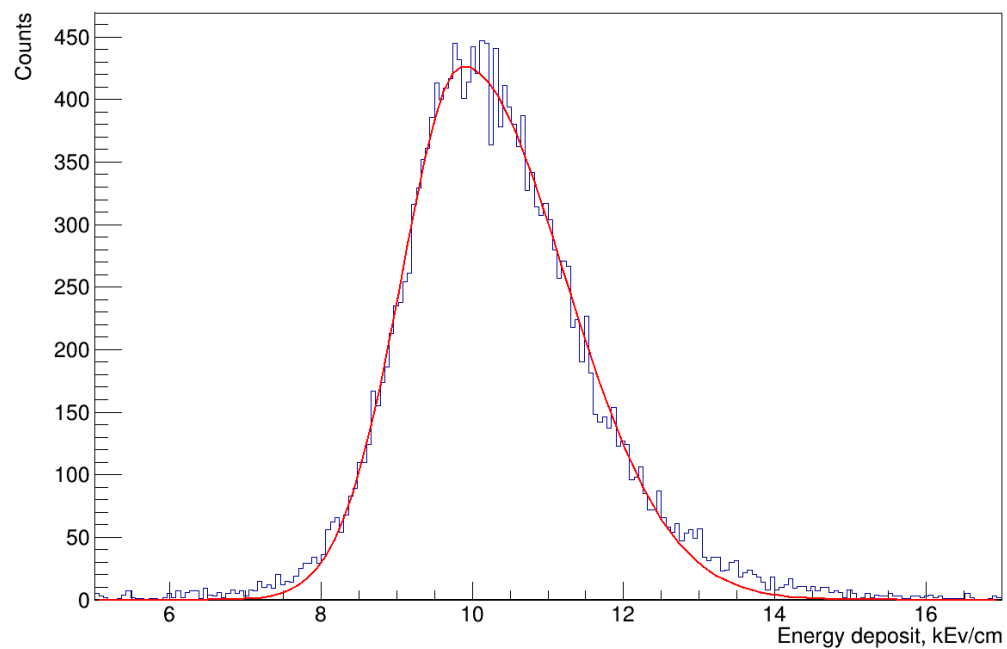
1.00 < p < 1.05 GeV/c
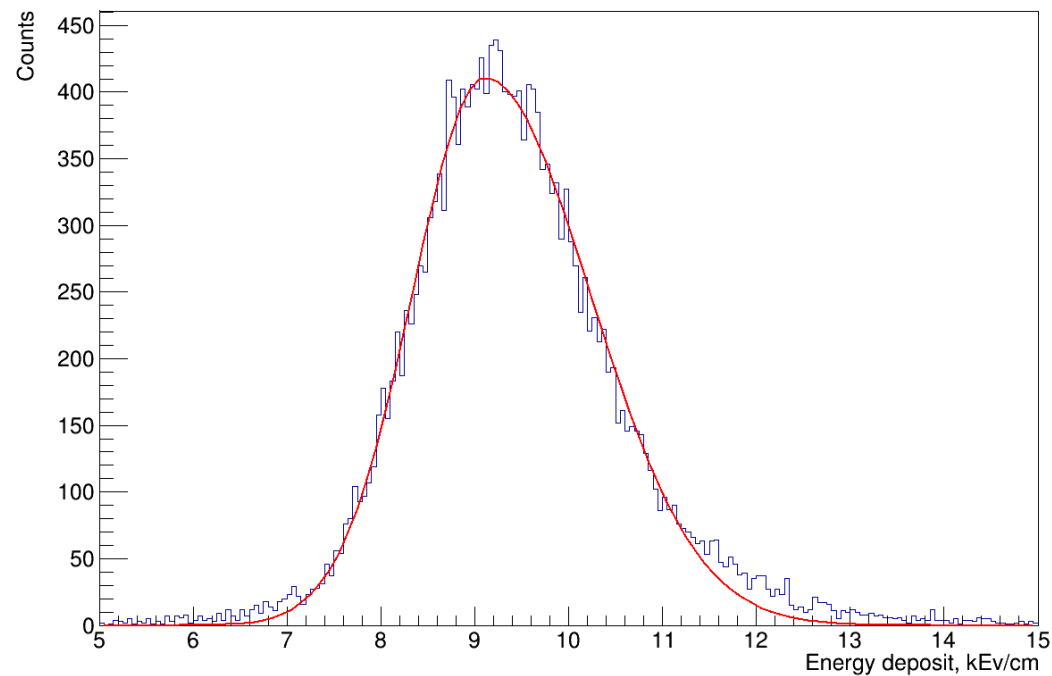
Deuterons
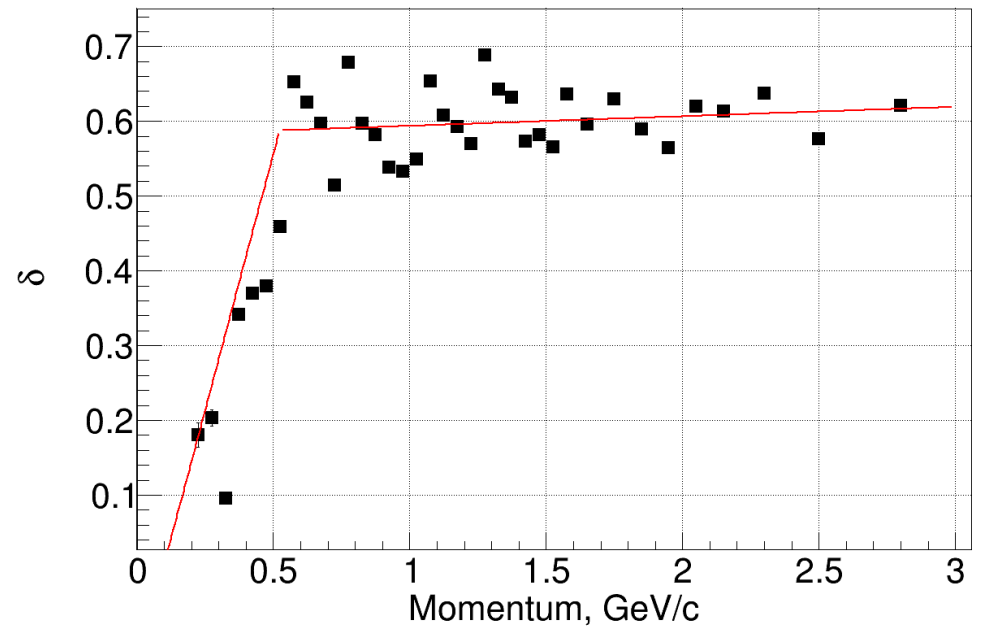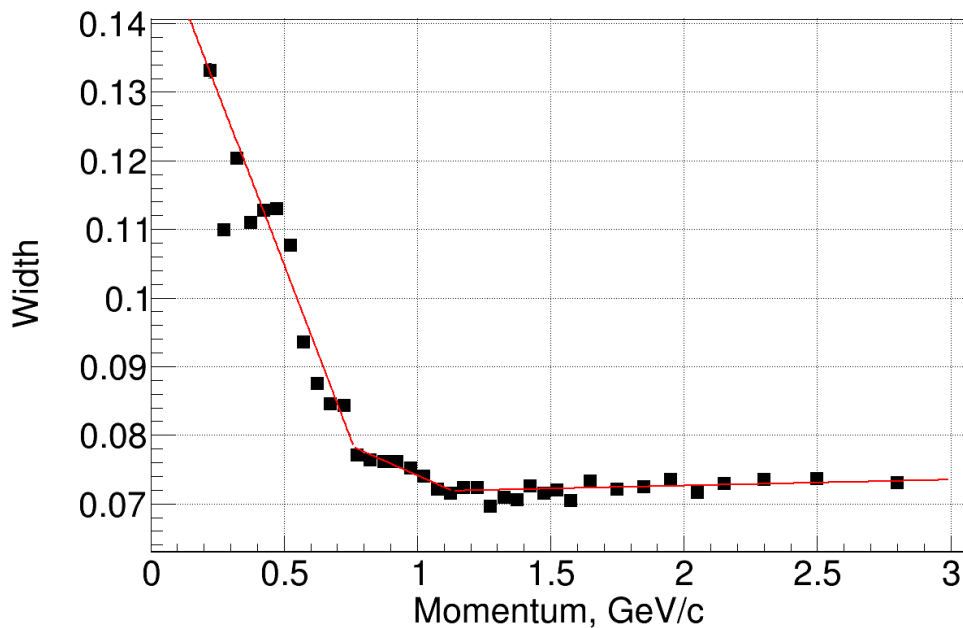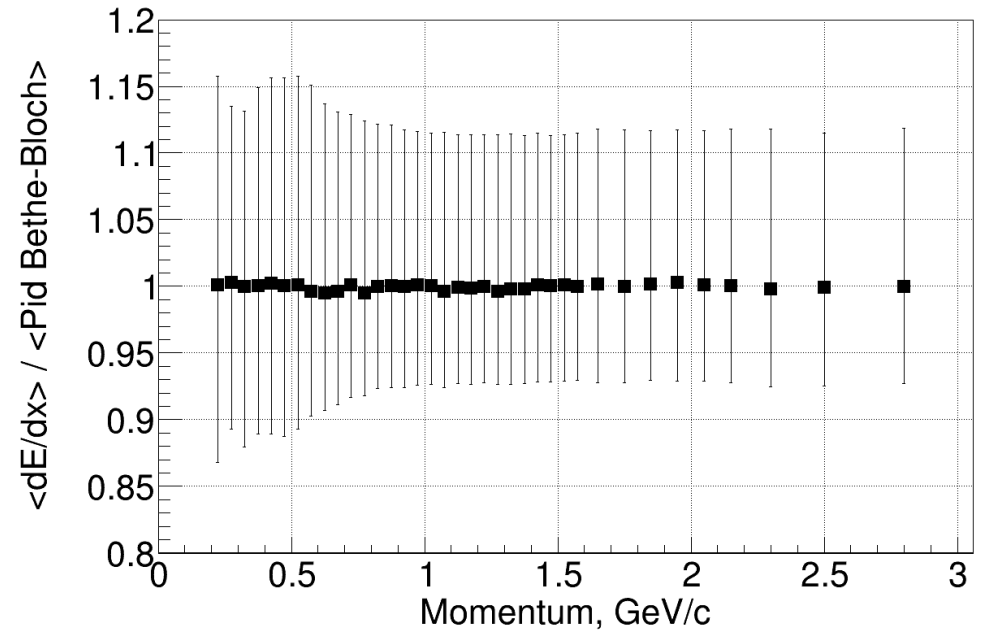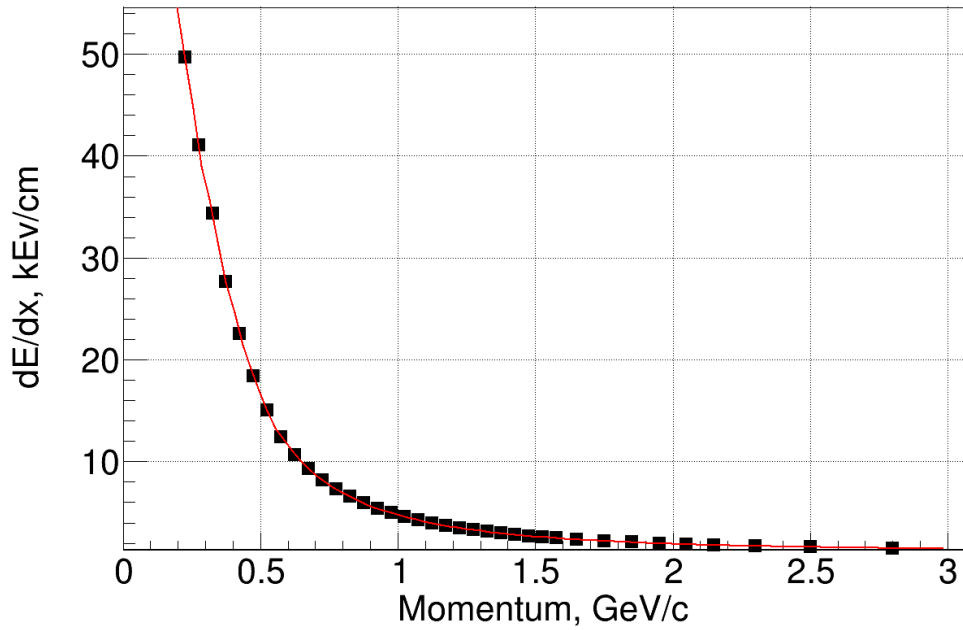
(anti)protons
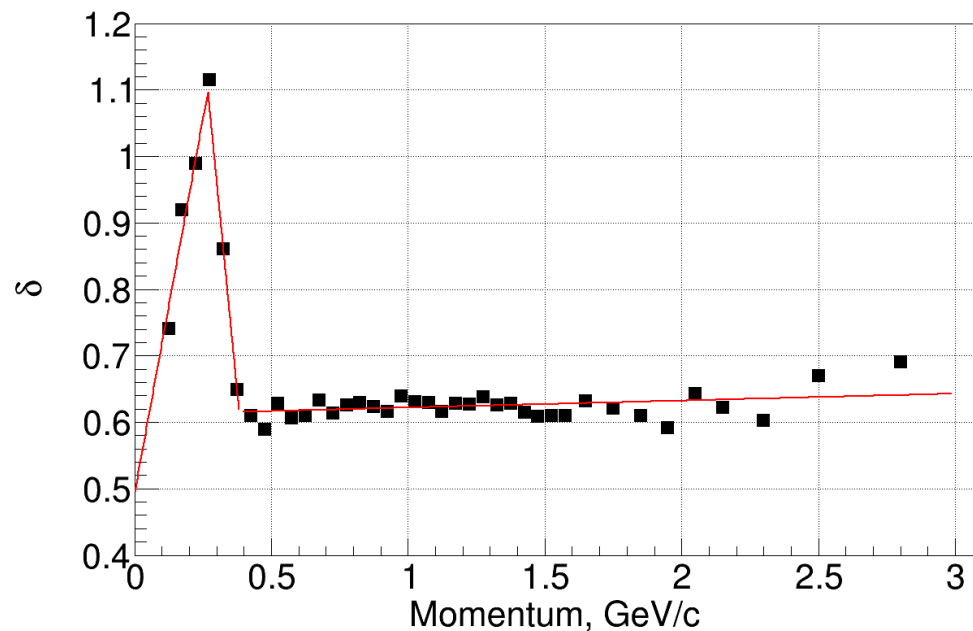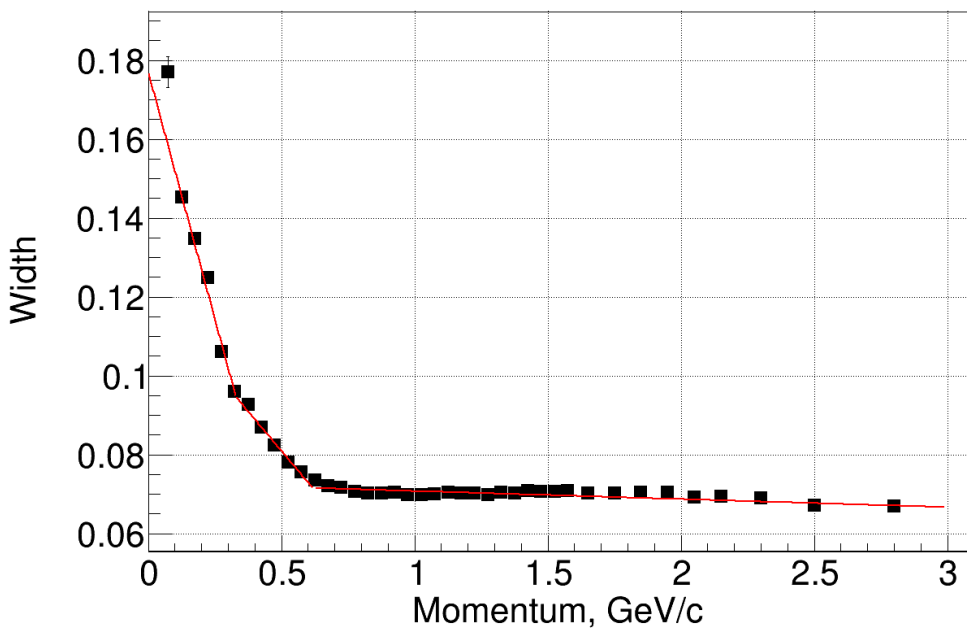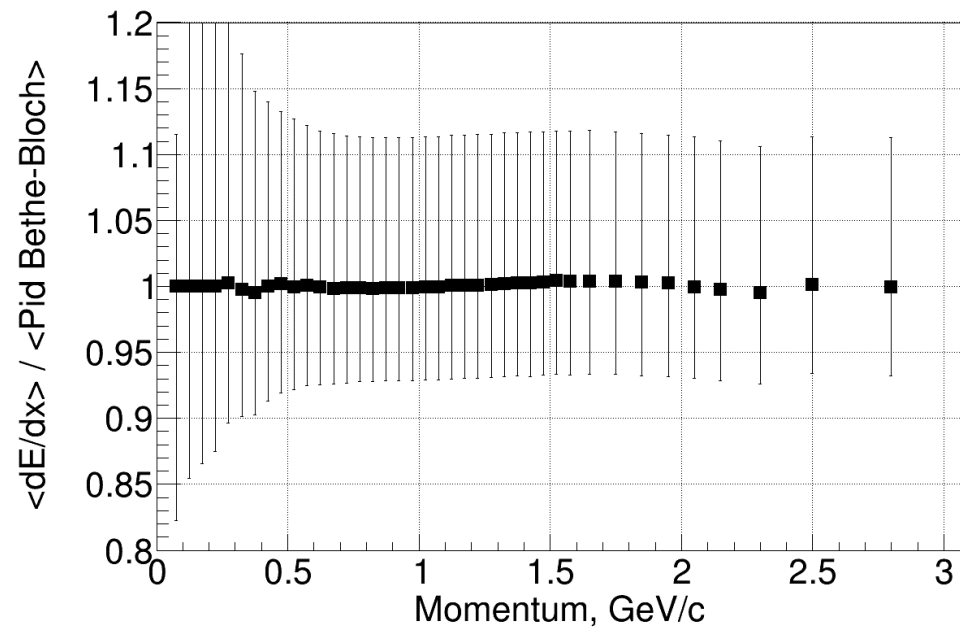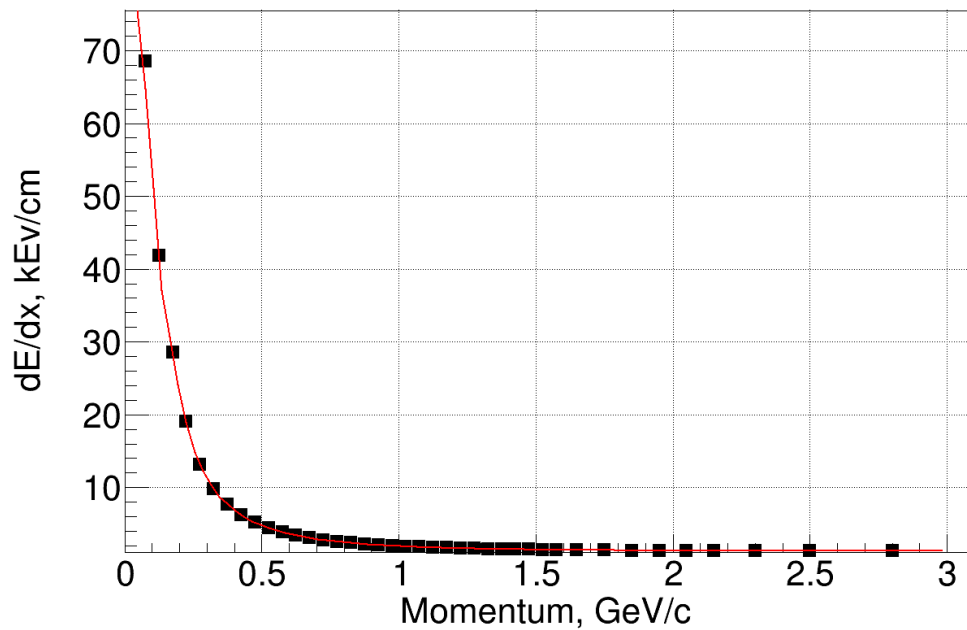
kaons
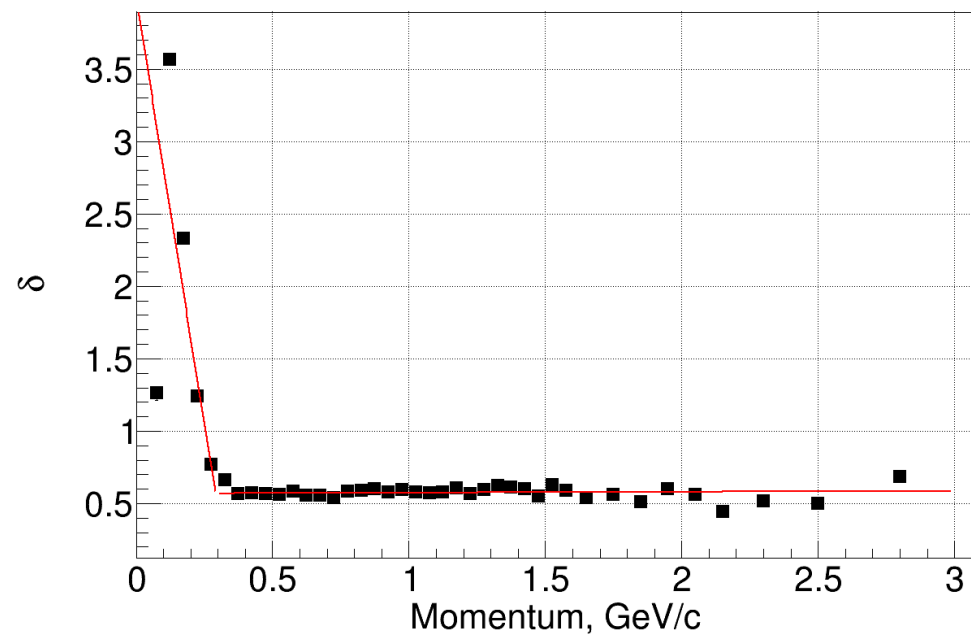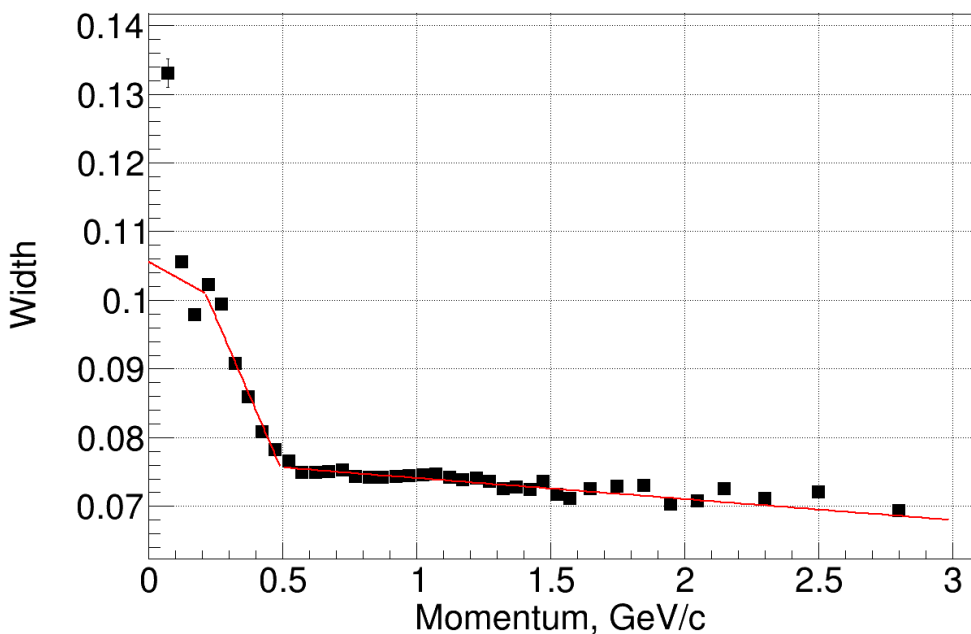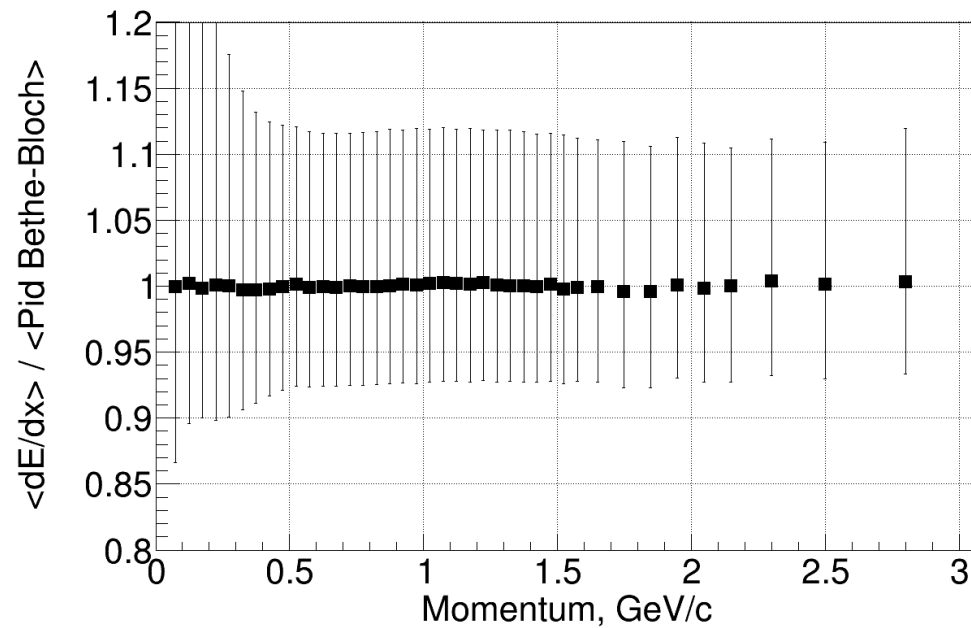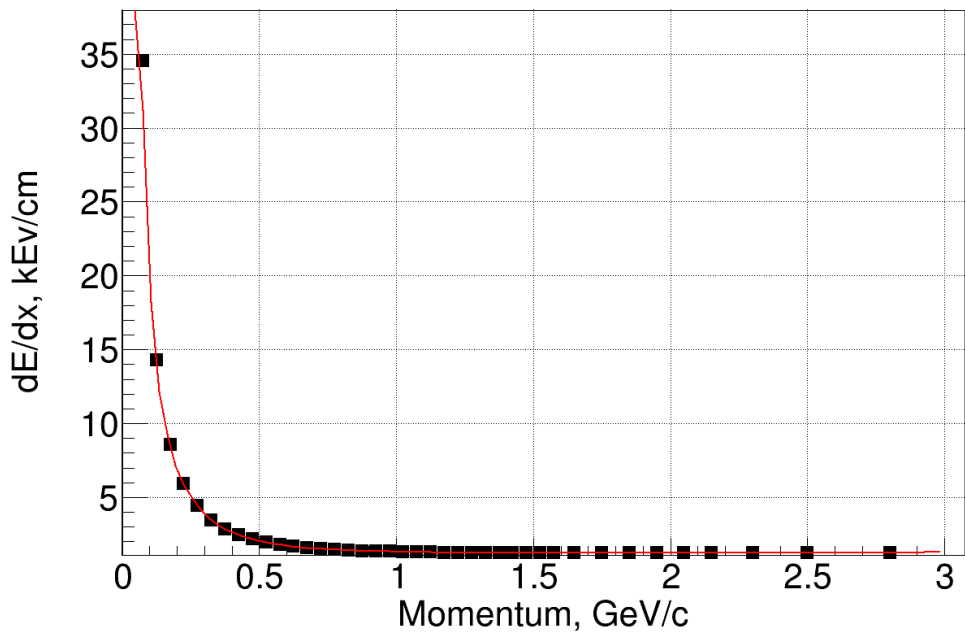
pions

m² (deuterons)

mismatching 5,2%
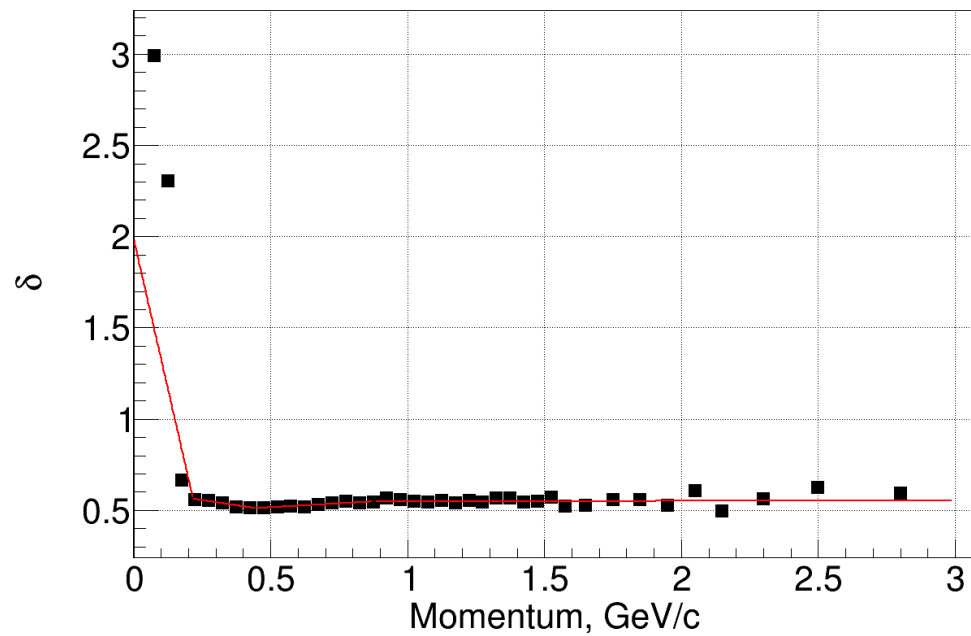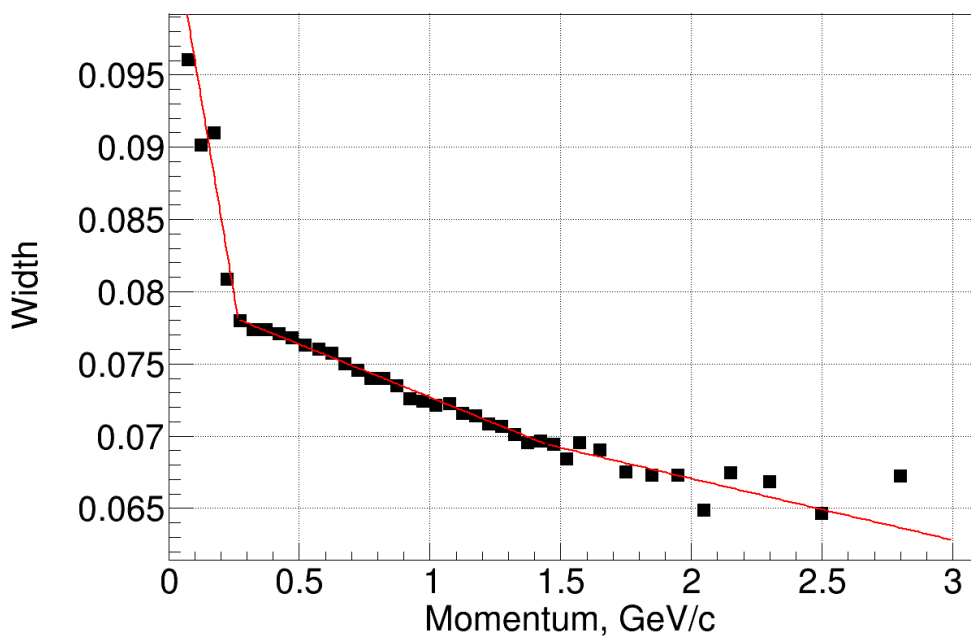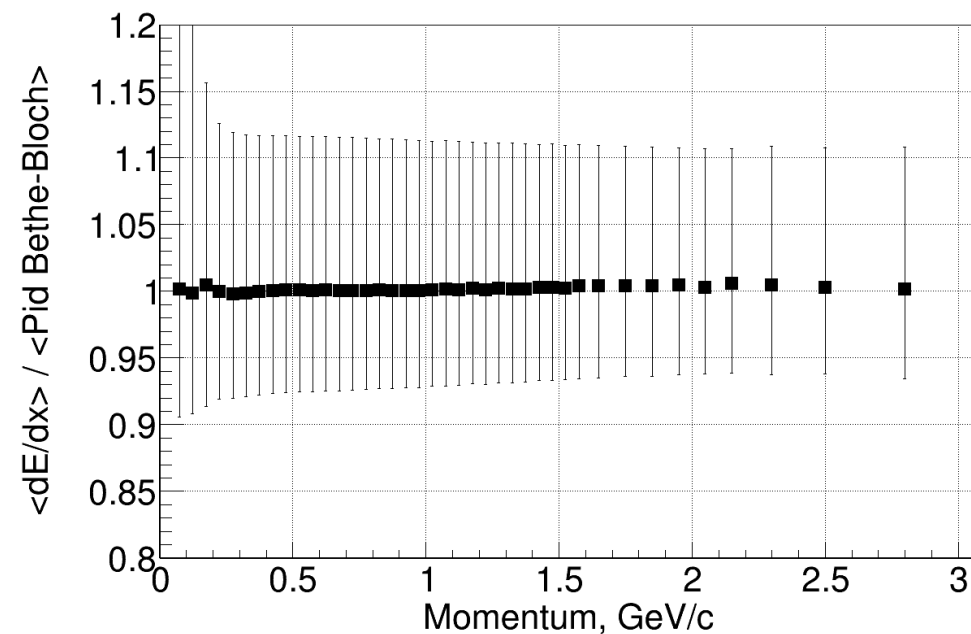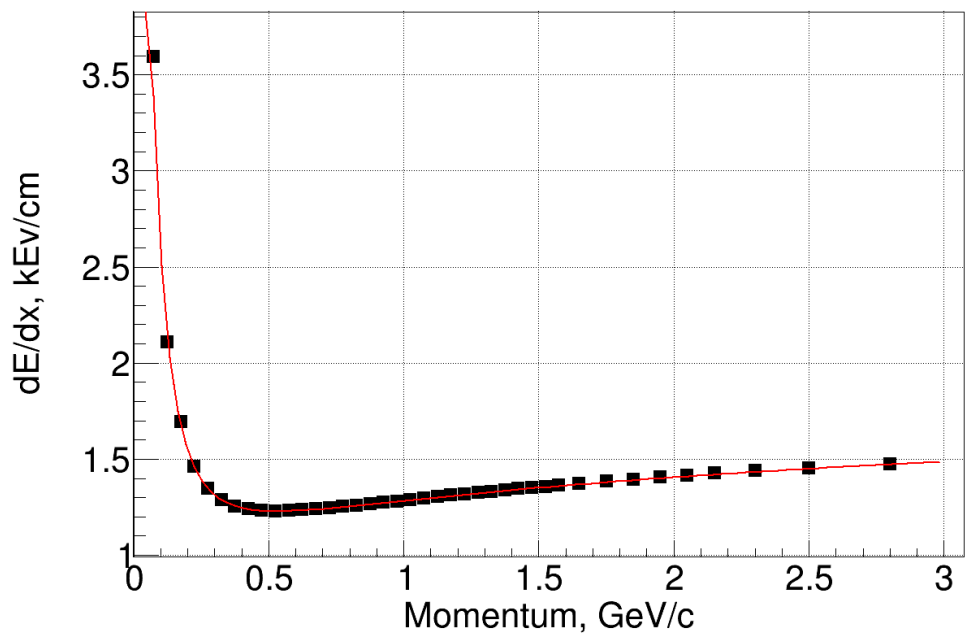
m² (tritons)

Mismatching 7,7%
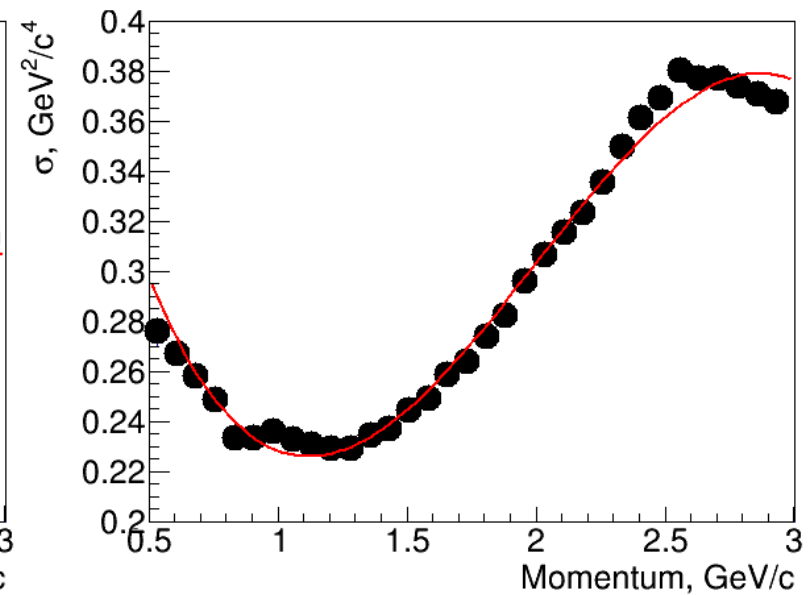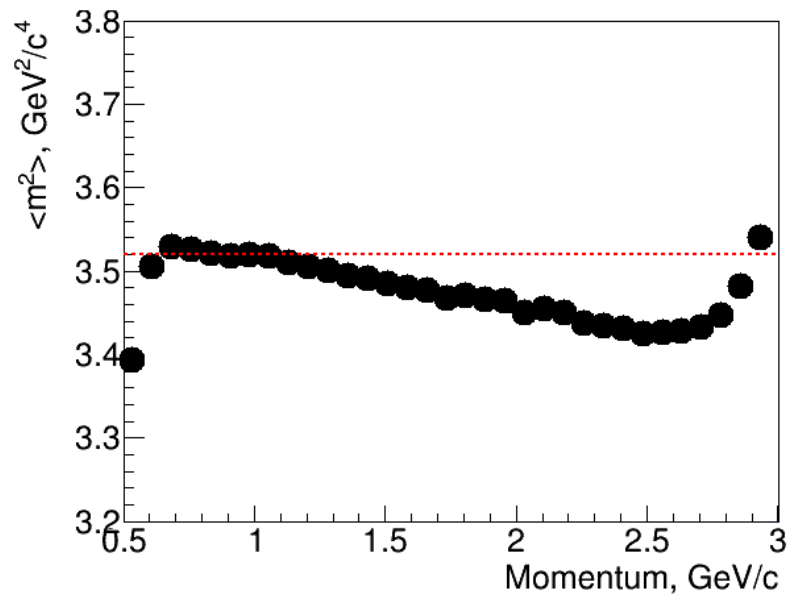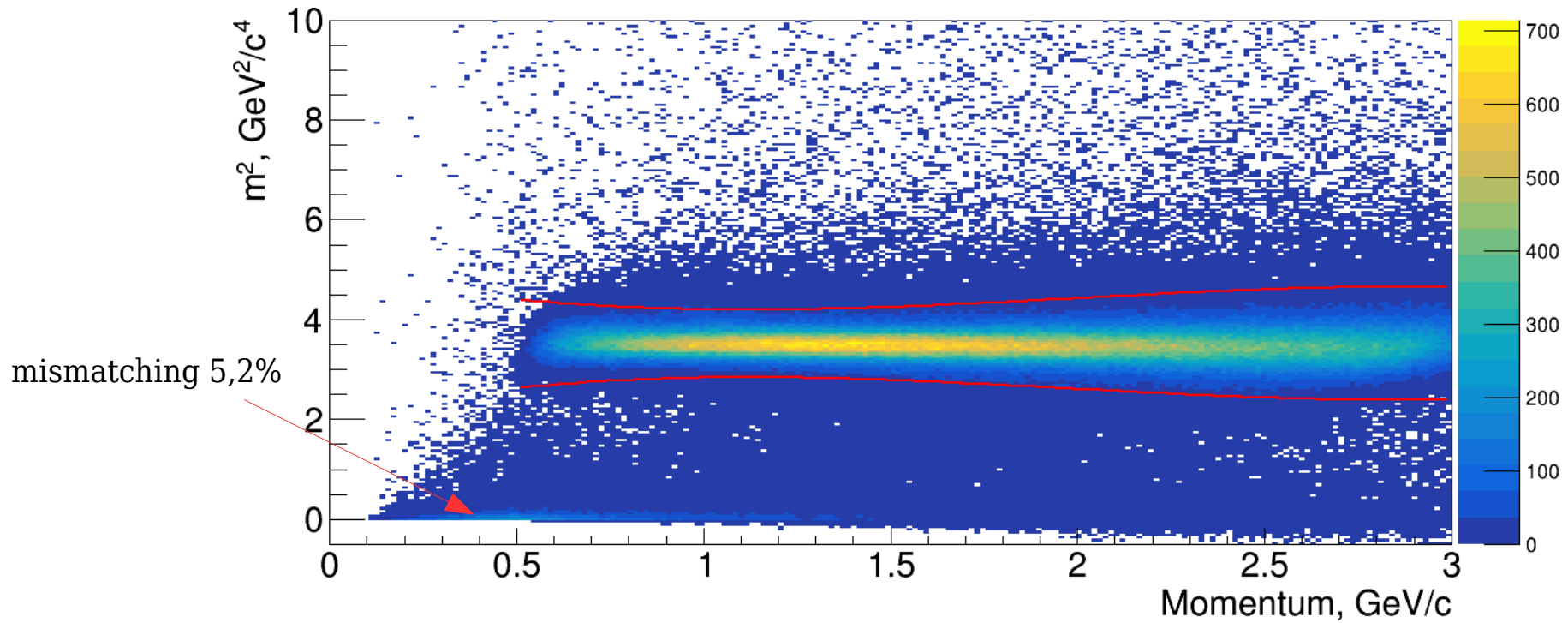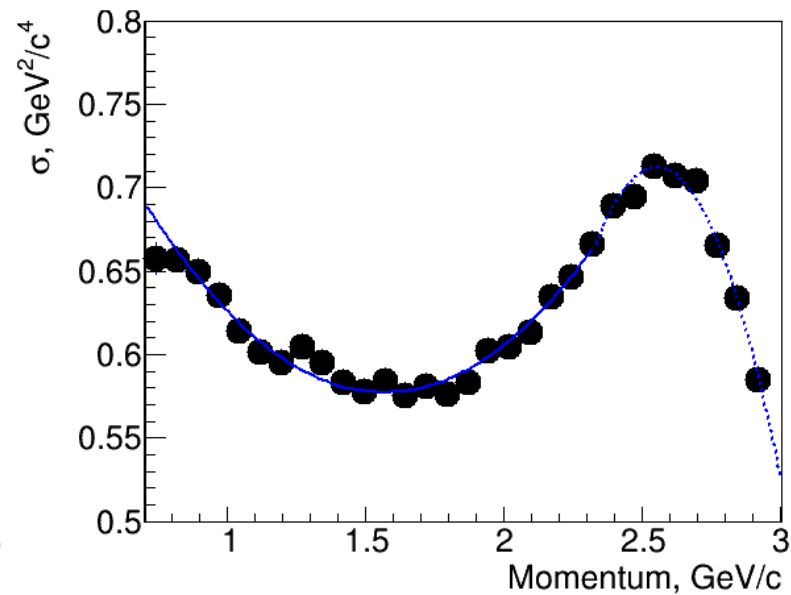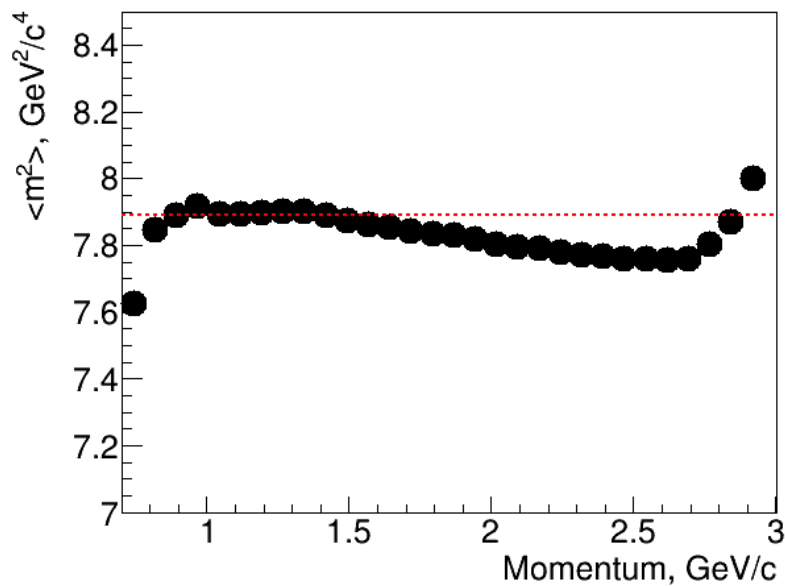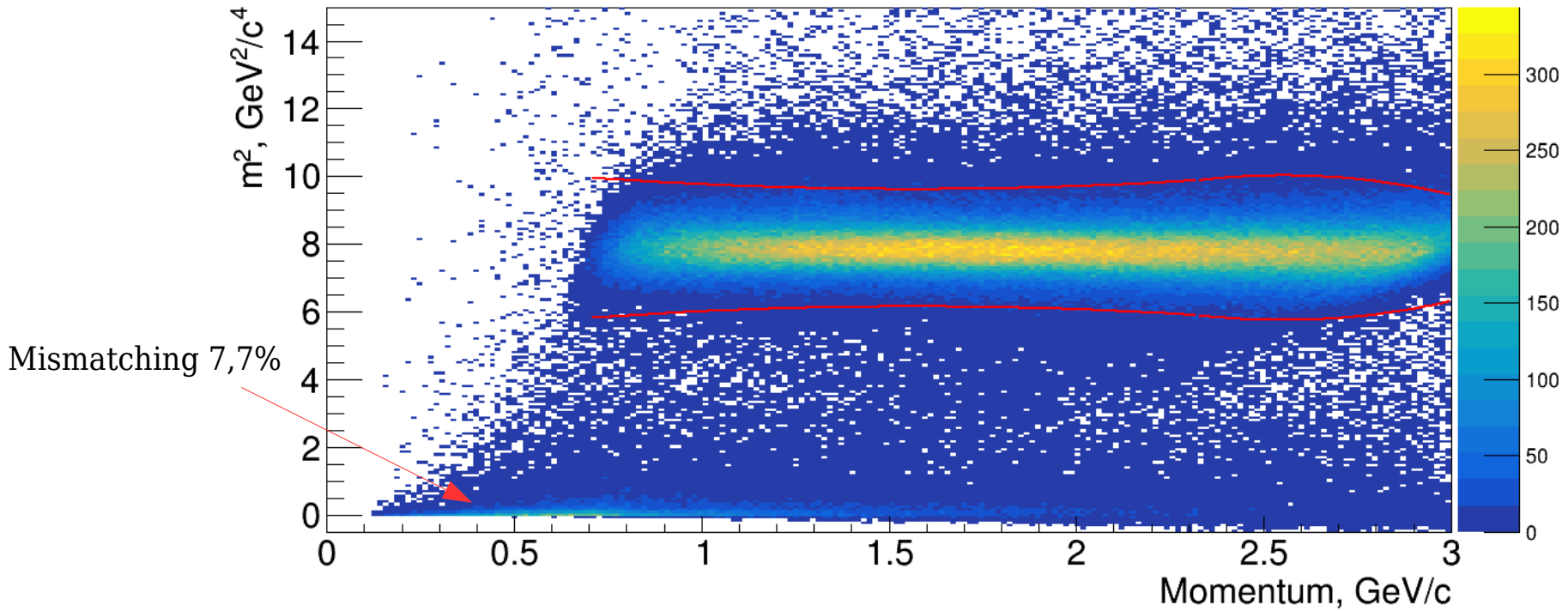
m² (He³)
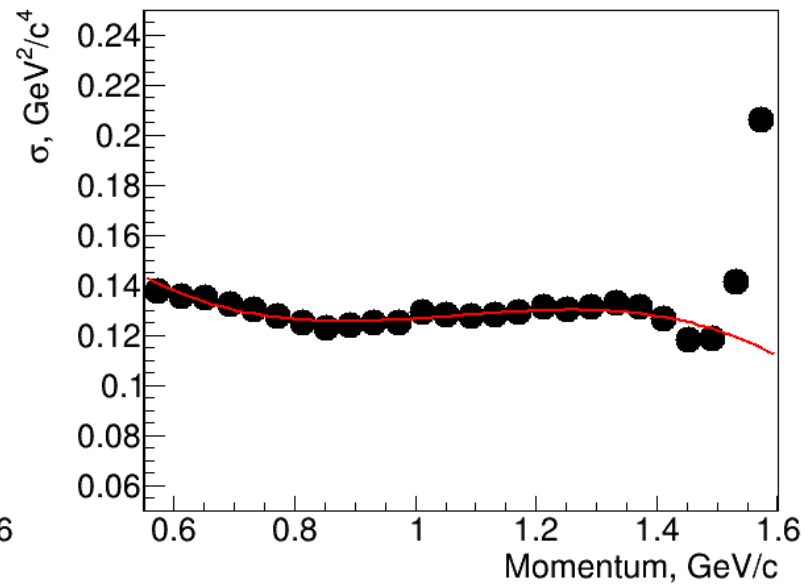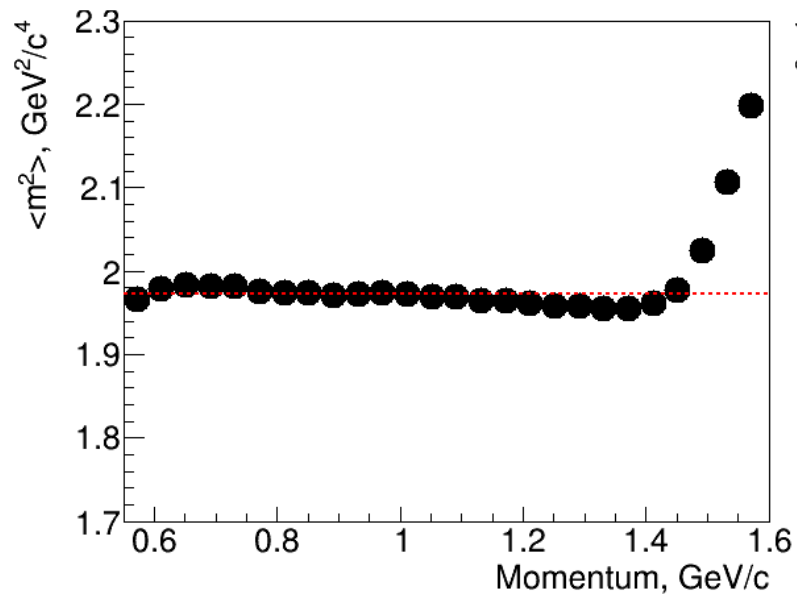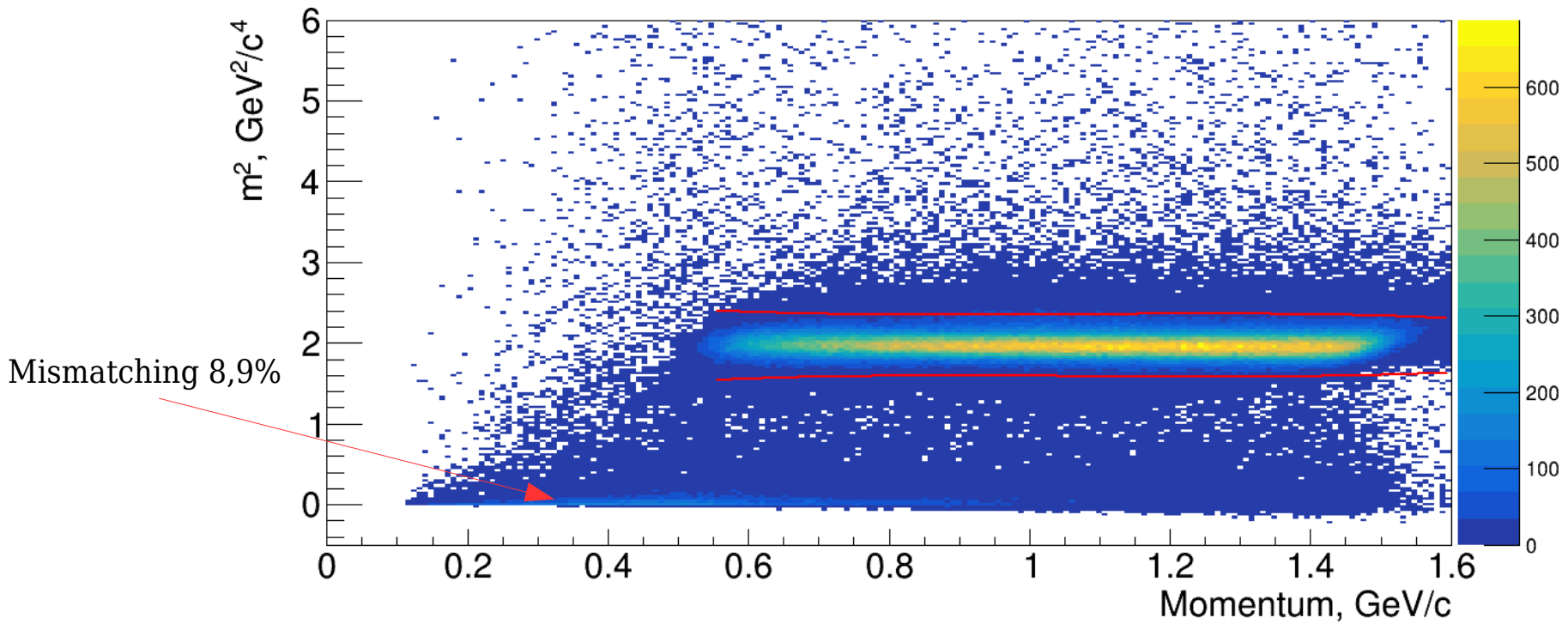
Mismatching 8,9%

m² (He⁴)
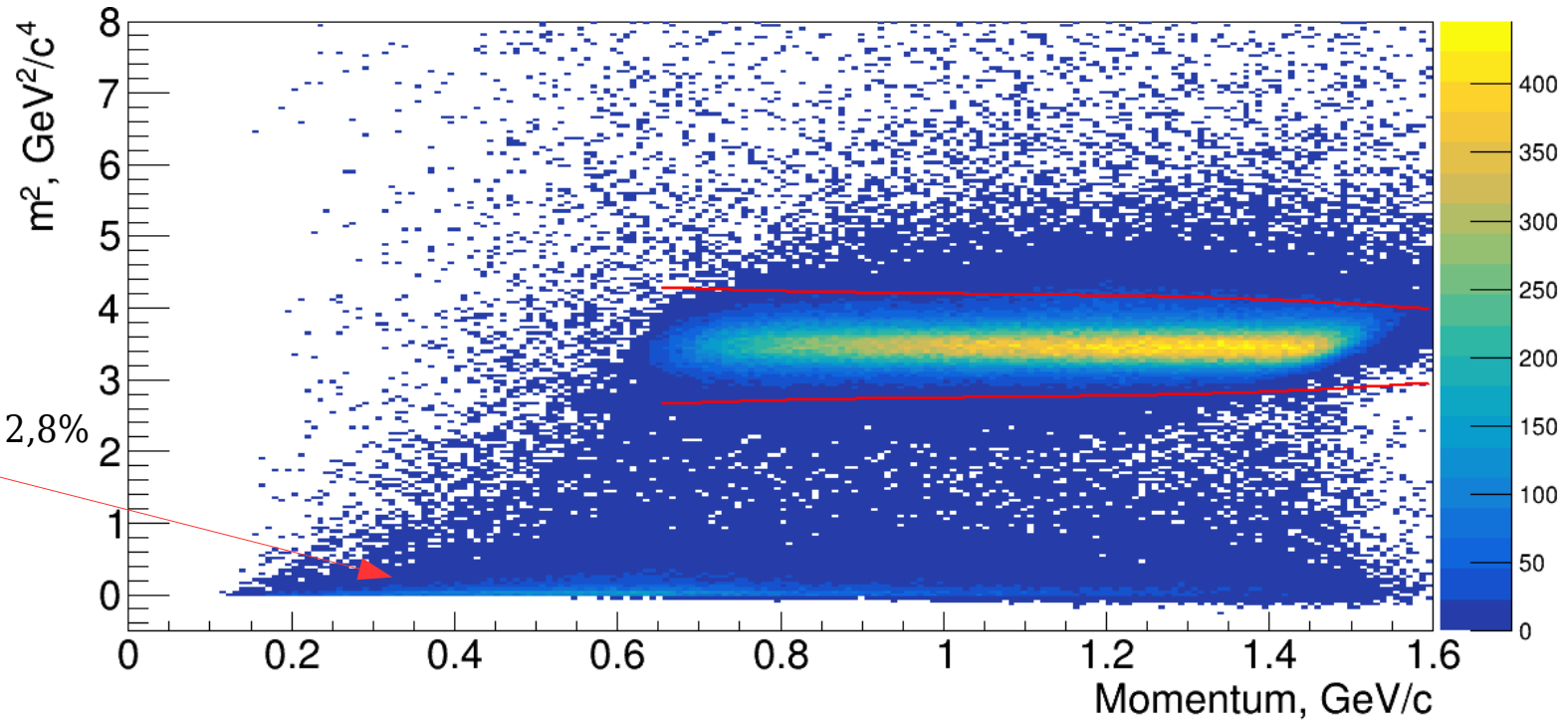
Mismatching 12,8%
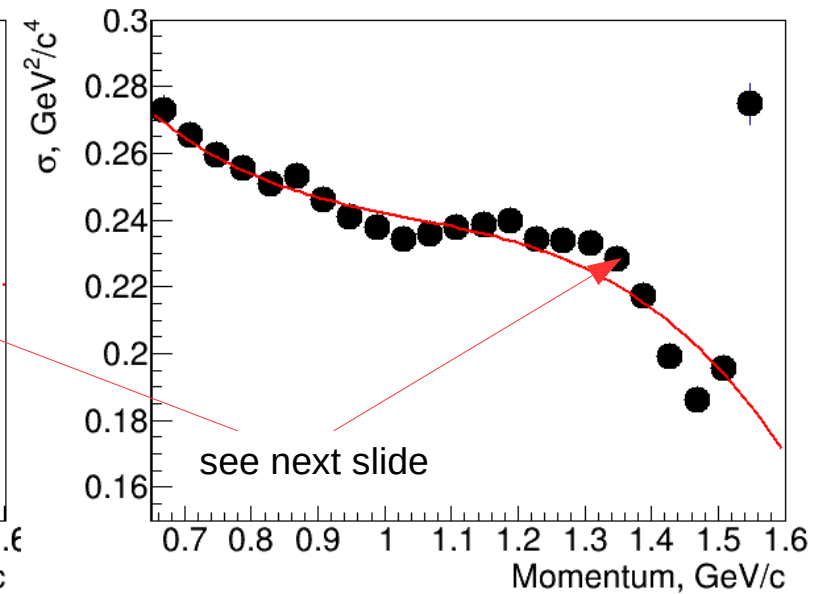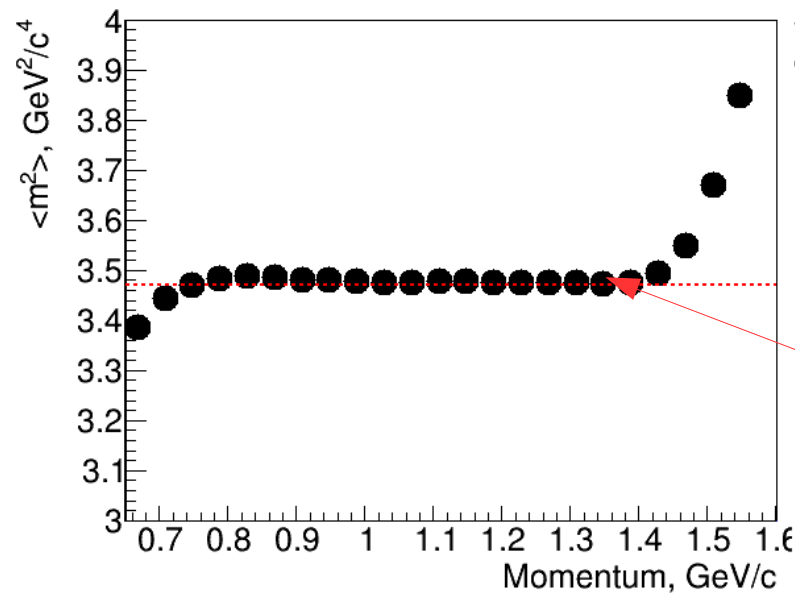
see next slide

m²-projection (He⁴)
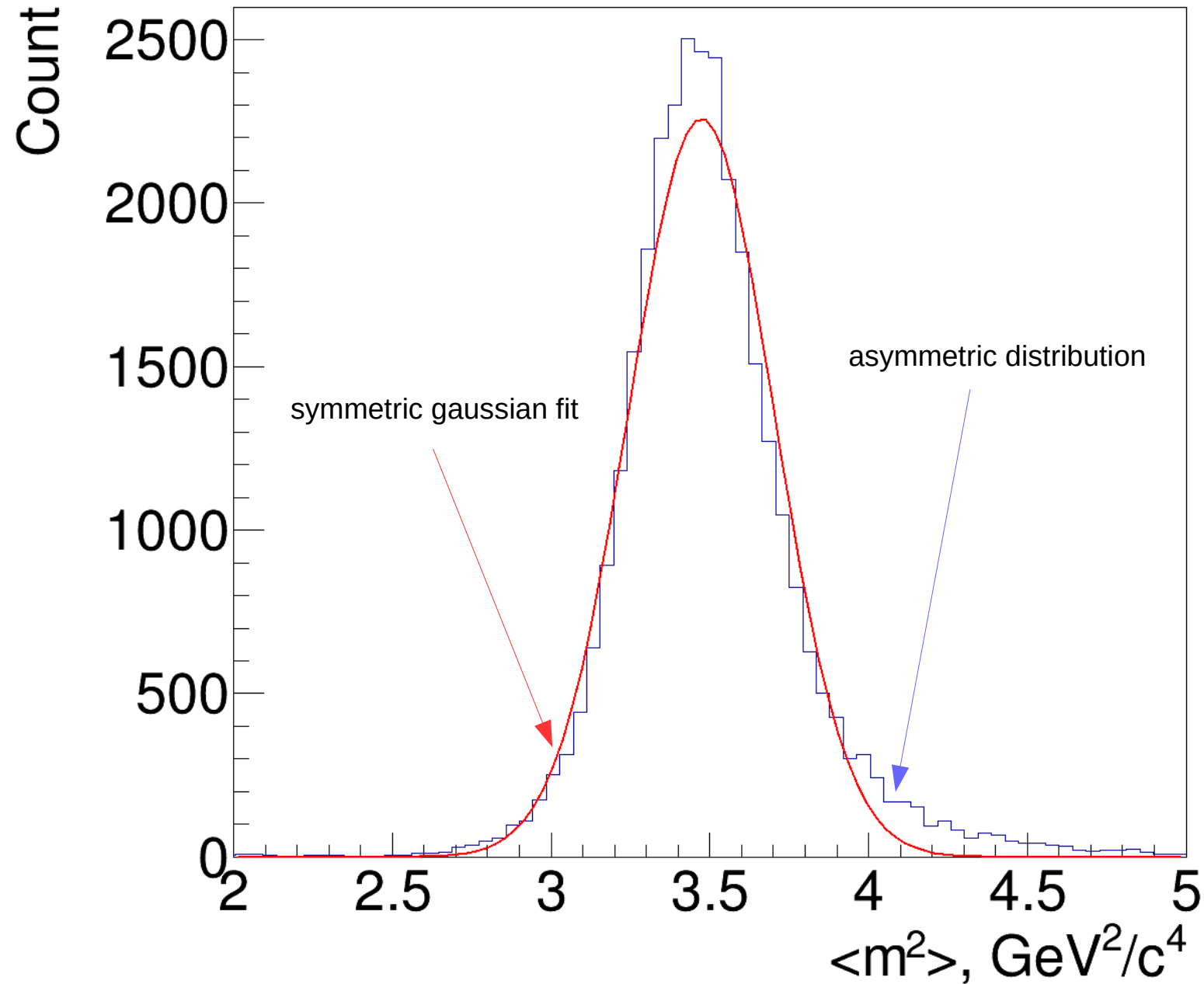
m²-resolution (hadrons)

STAR
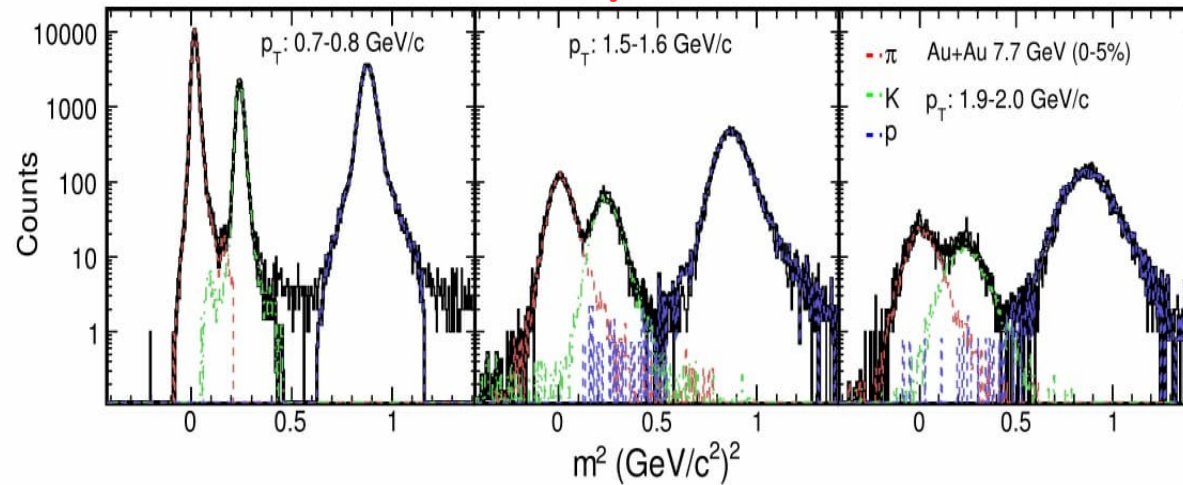
The m^2 distributions for positively charged hadrons used to extract raw yields for pions, kaons, and protons in $|y| < 0.1$ for Au+Au collisions at 7.7 GeV at three different p_T ranges. The curves are predicted m^2 fits representing contributions from pions (dashed-red), kaons (dashed-green), and protons (dashed-blue).

MPD