Start Counter Attenuation Corrections

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dE/dx (au) Plots for paddle 18, interval 3

Select fast pion tracks with p > 500 MeV.

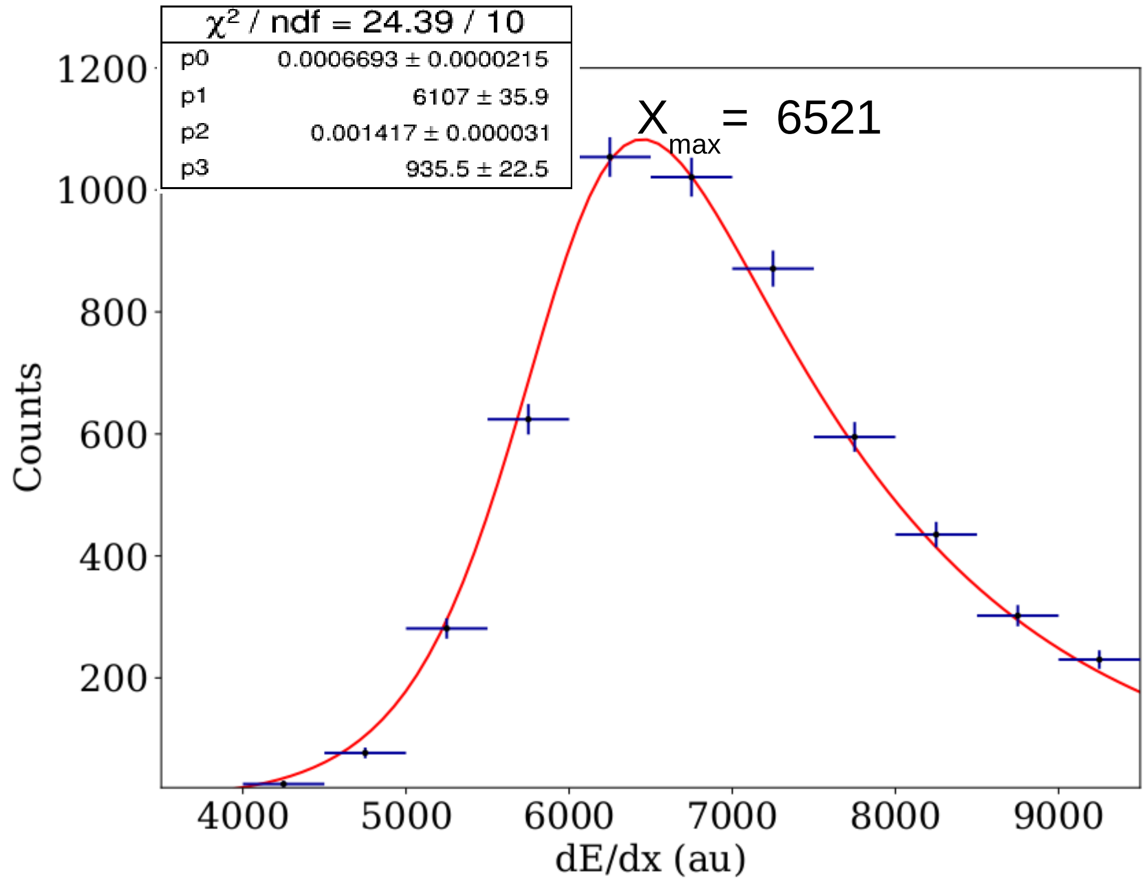
Each paddle is divided into 12 intervals along z starting from z=18.5 cm in the start counter coordinates. Each interval is about 3.5 cm in length.

Fit the empirical function $f(x) = P_3 \, (e^{-p0\,(x - p1)}) \, (1 + \tanh(p_2(x-p1)))$ to the data

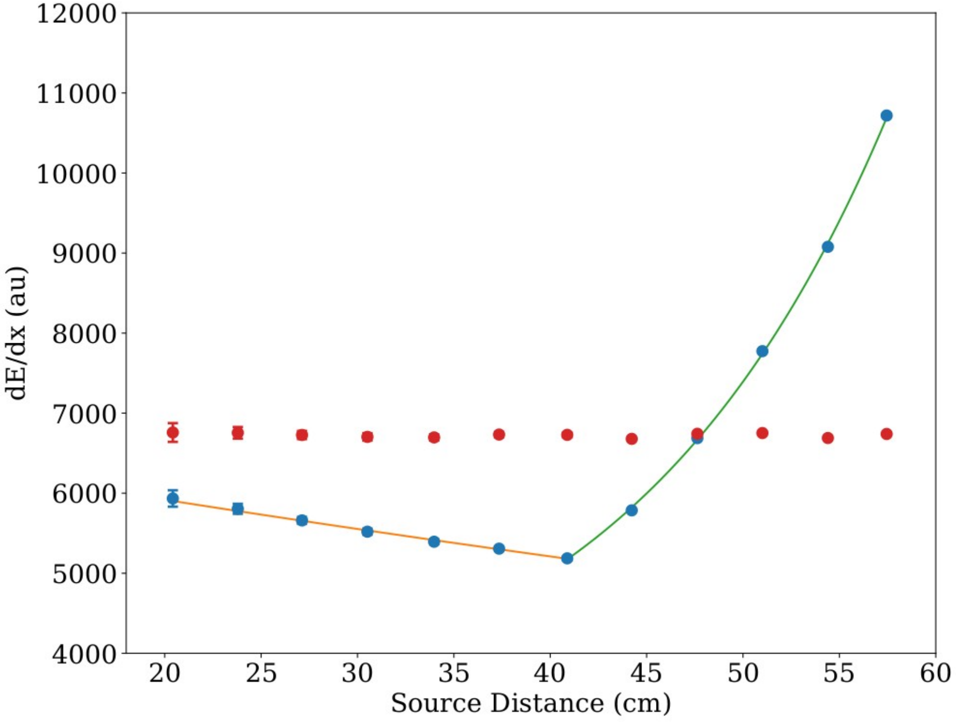
Calculate MPV of the dE/dx for each interval:

$$X_{max} = p_1 + (1/p_2) \tanh^{-1}(1 - p_0/p_2)$$

Determine the average z in each interval



Plots for paddle 19 : dE/dx vs Z

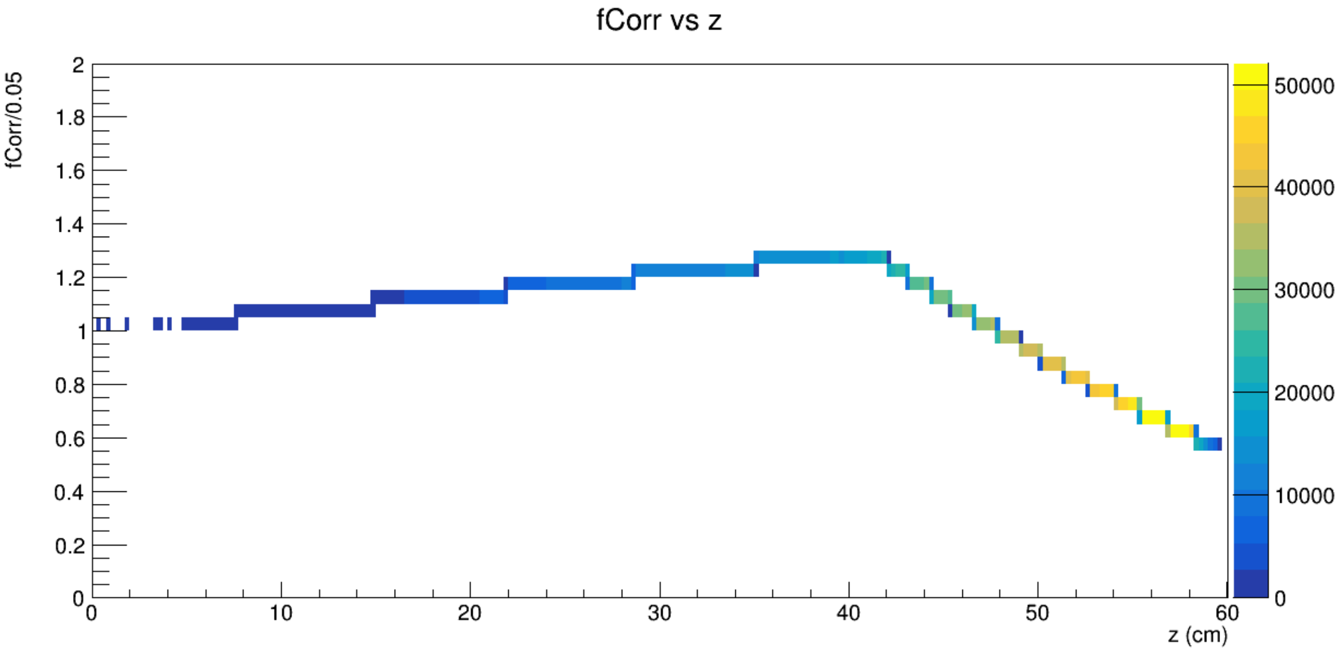


Plot dE/dx vs Z.

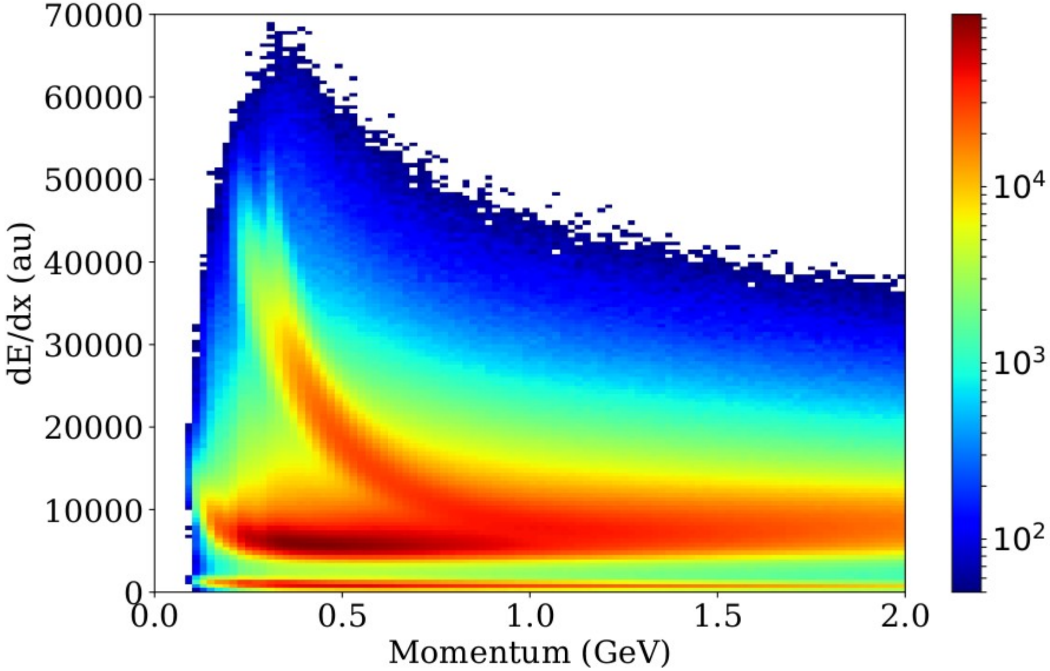
Fit two exponential functions for the straight and BN sections: $A_s \exp(B_s z)$ and $A_n \exp(b_n z)+c_n$

Calculate the correction factor: f_att (0)/f_att

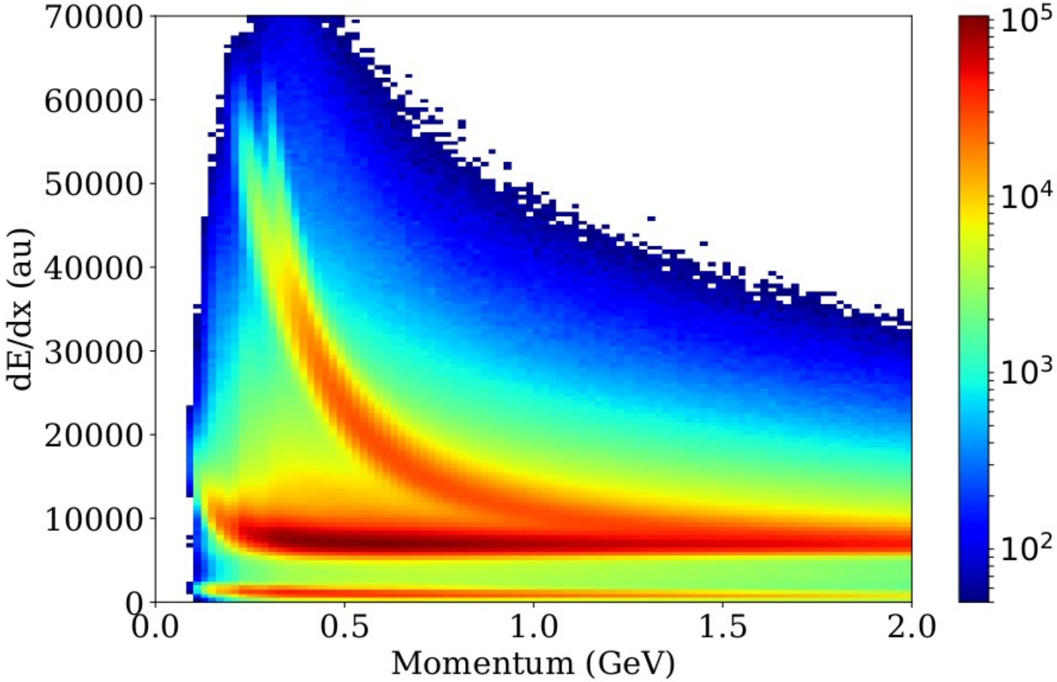
Apply the correction and plot dE/dx vs Z after correction



SC: dE/dx (au) vs P



Before Correction



Corrected dE/dx:

$(dE/dx)_{corr1}$ = dE/dx * fCorr

gain = $((dE/dx)_{corr1})_{ave}/(dE/dx)_{corr1}$

$(dE/dx)_{corr2}$ = dE/dx * fCorr * gain

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