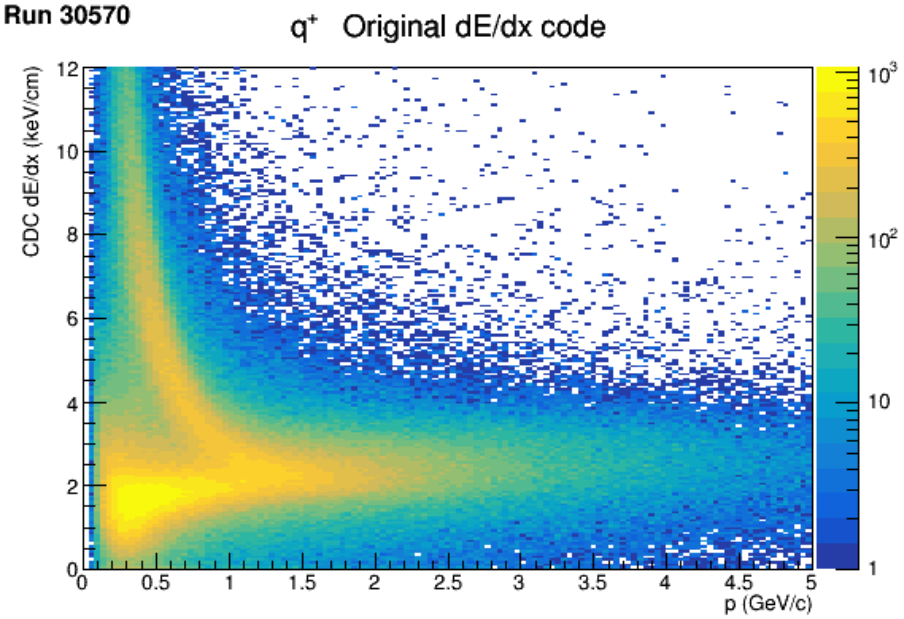
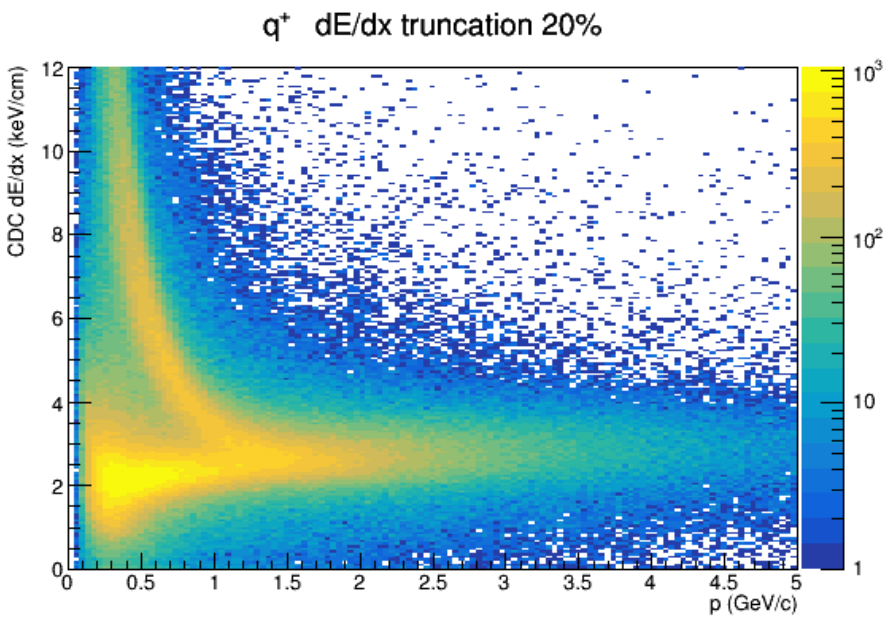
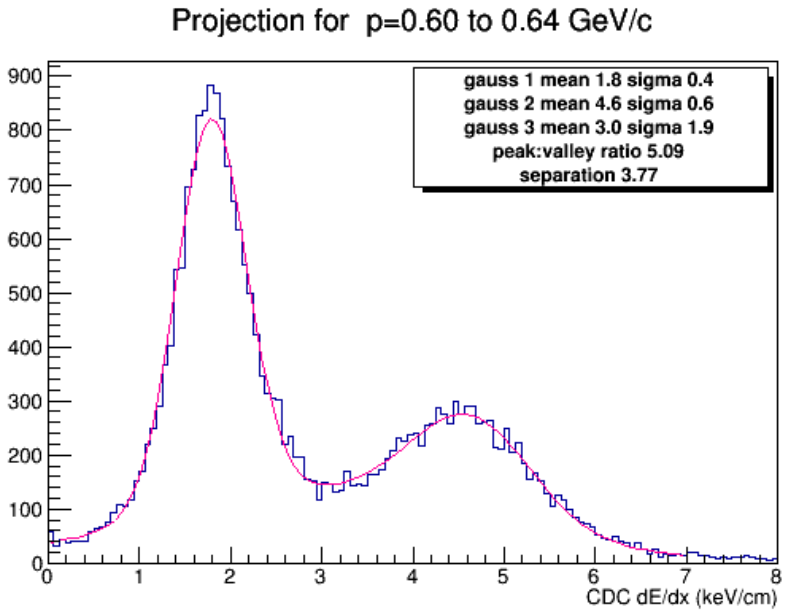
CDC dE/dx with 20% truncation

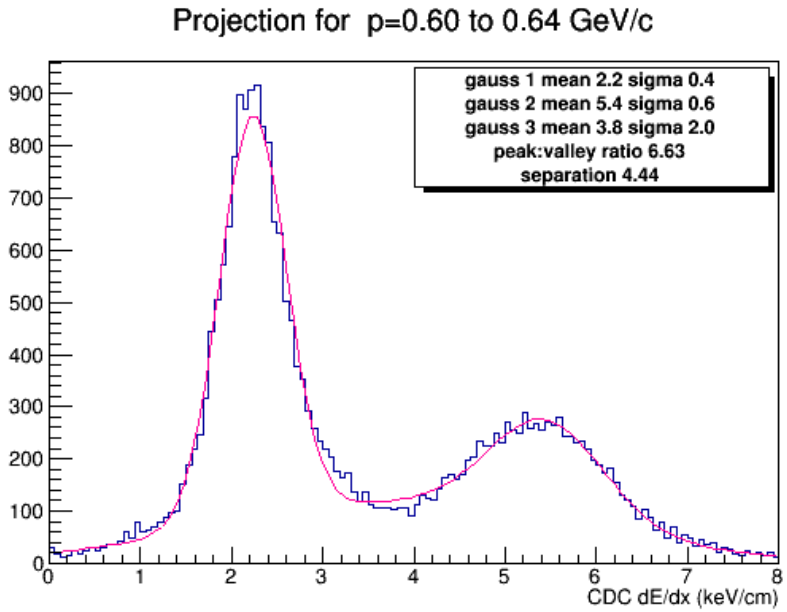
dE/dx uses 50% of hits with lowest dE/dx, change this to 80% (from Nacer's studies)

Run 30570

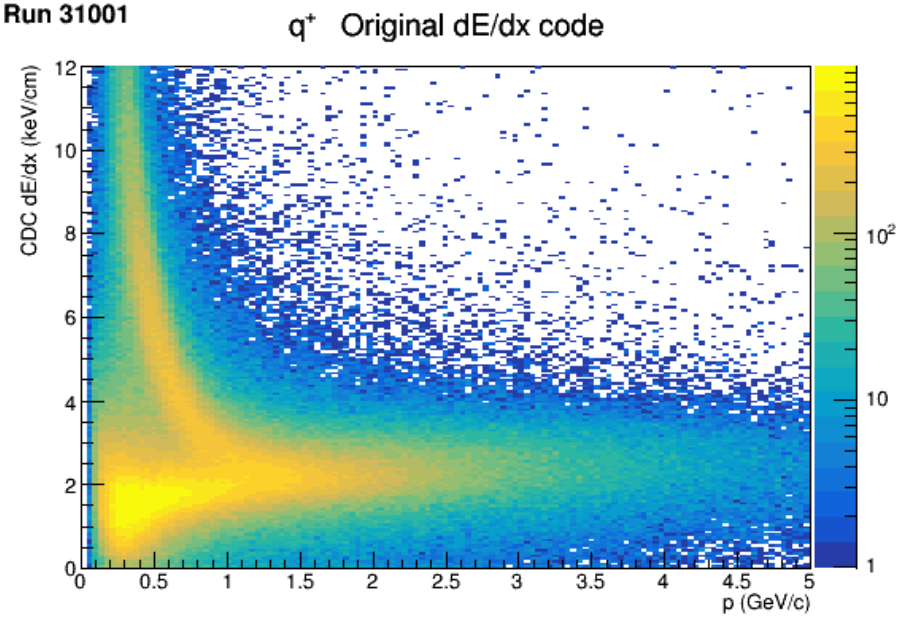

q⁺ Original dE/dx code
CDC dE/dx (keV/cm)
p (GeV/c)

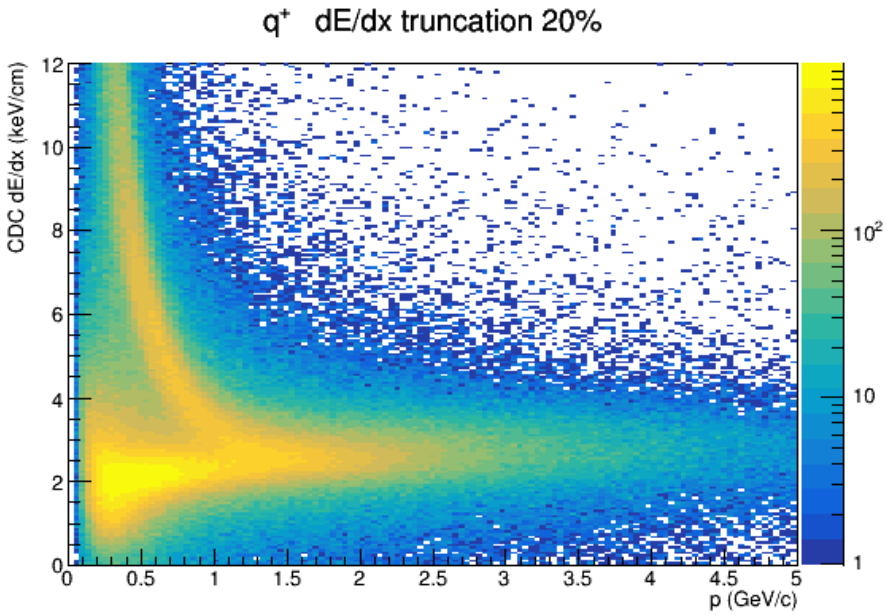

q⁺ dE/dx truncation 20%
CDC dE/dx (keV/cm)
p (GeV/c)

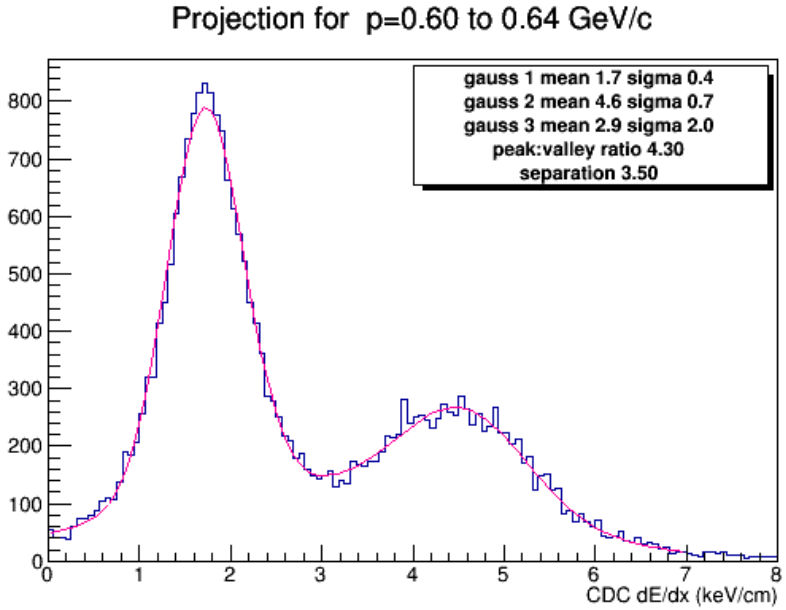

Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 1.8 sigma 0.4
gauss 2 mean 4.6 sigma 0.6
gauss 3 mean 3.0 sigma 1.9
peak:valley ratio 5.09
separation 3.77
CDC dE/dx (keV/cm)

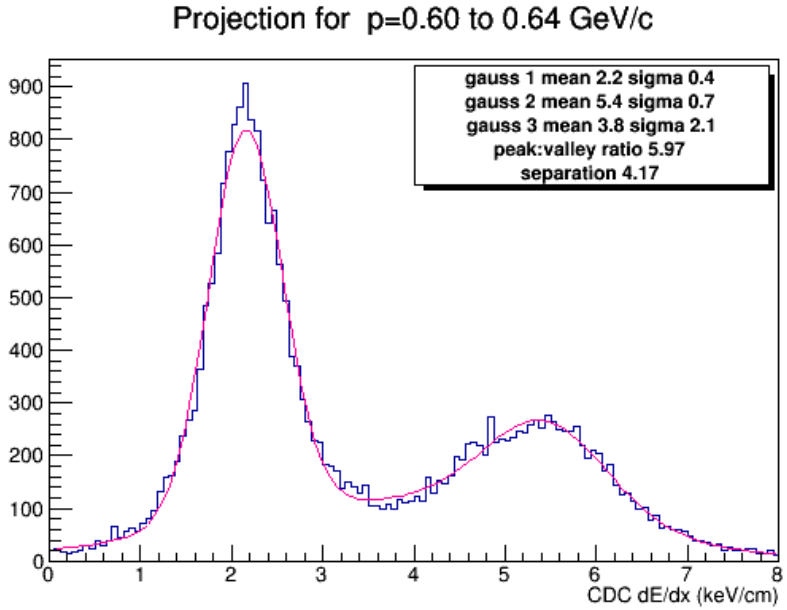

Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 2.2 sigma 0.4
gauss 2 mean 5.4 sigma 0.6
gauss 3 mean 3.8 sigma 2.0
peak:valley ratio 6.63
separation 4.44
CDC dE/dx (keV/cm)

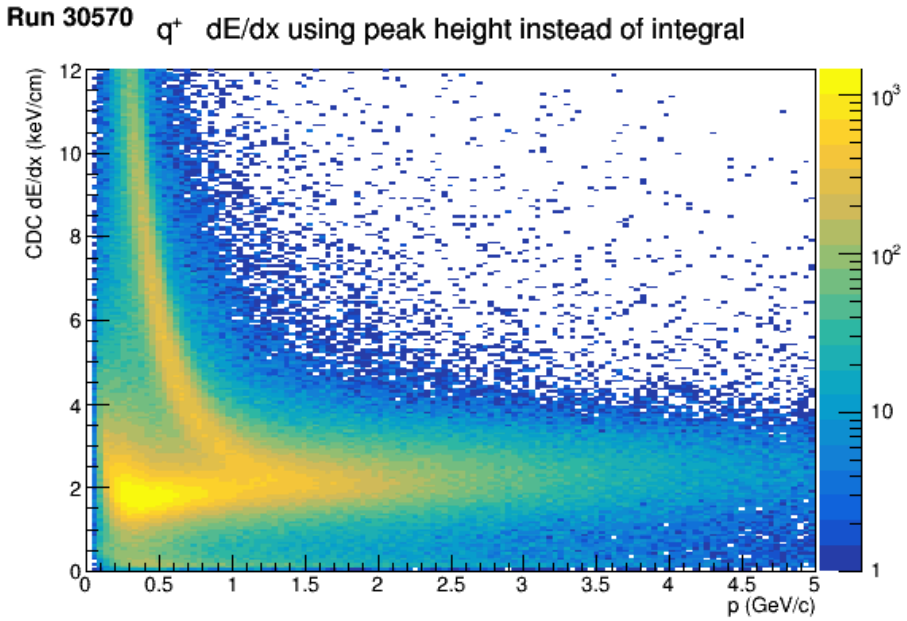
Run 31001

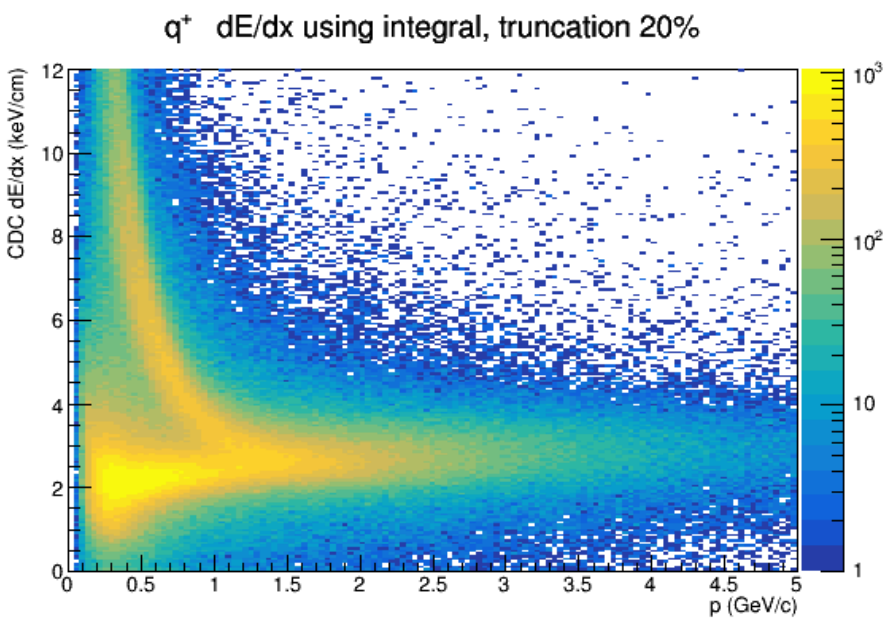

q⁺ Original dE/dx code
CDC dE/dx (keV/cm)
p (GeV/c)

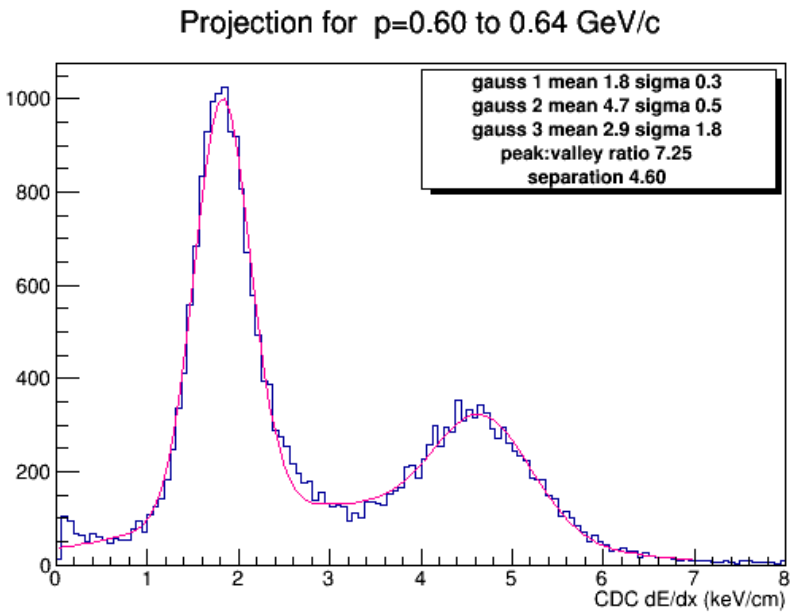

q⁺ dE/dx truncation 20%
CDC dE/dx (keV/cm)
p (GeV/c)

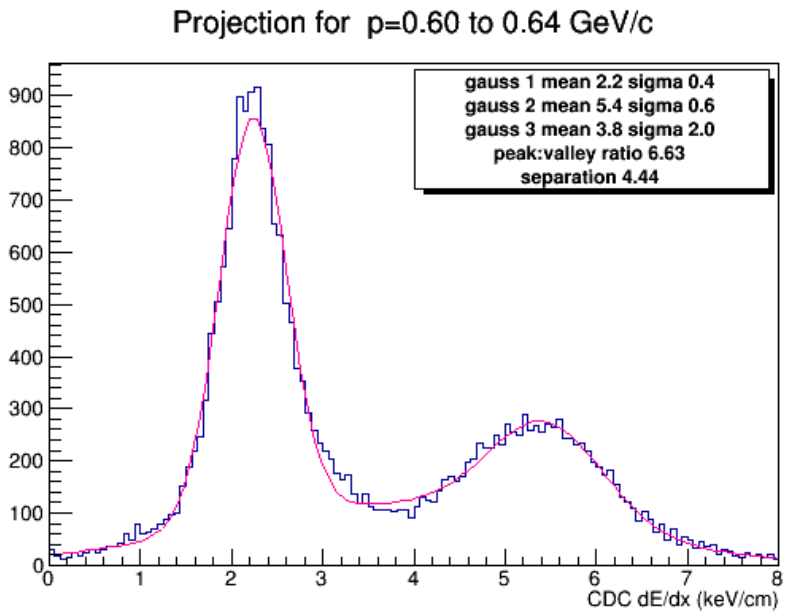

Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 1.7 sigma 0.4
gauss 2 mean 4.6 sigma 0.7
gauss 3 mean 2.9 sigma 2.0
peak:valley ratio 4.30
separation 3.50
CDC dE/dx (keV/cm)

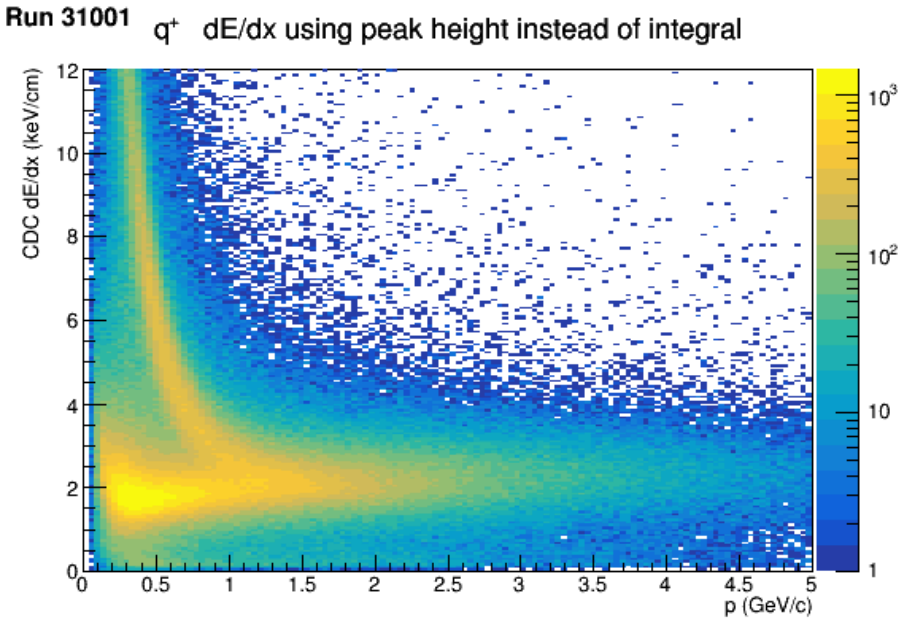

Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 2.2 sigma 0.4
gauss 2 mean 5.4 sigma 0.7
gauss 3 mean 3.8 sigma 2.1
peak:valley ratio 5.97
separation 4.17
CDC dE/dx (keV/cm)

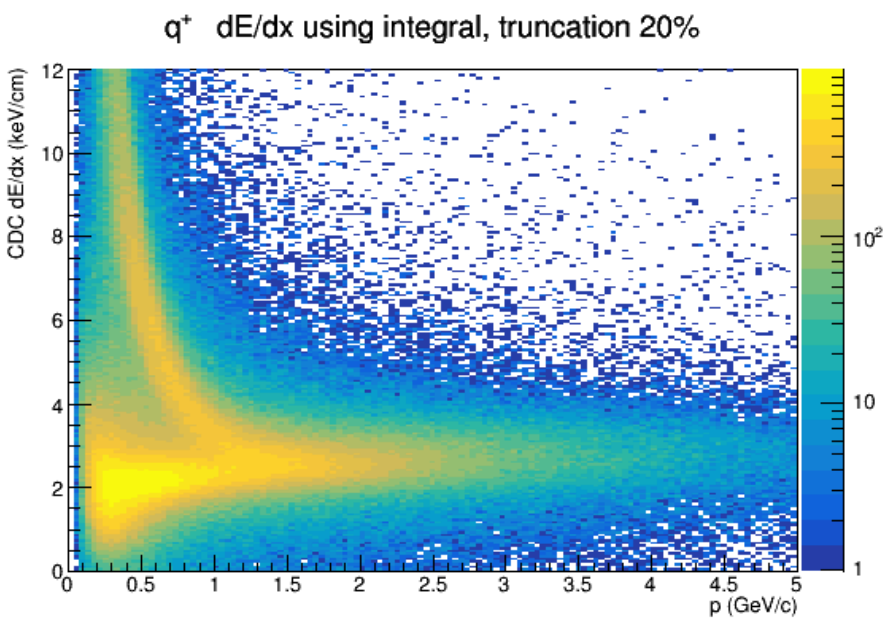

Run 30570
q+ dE/dx using peak height instead of integral
CDC dE/dx (keV/cm)
p (GeV/c)

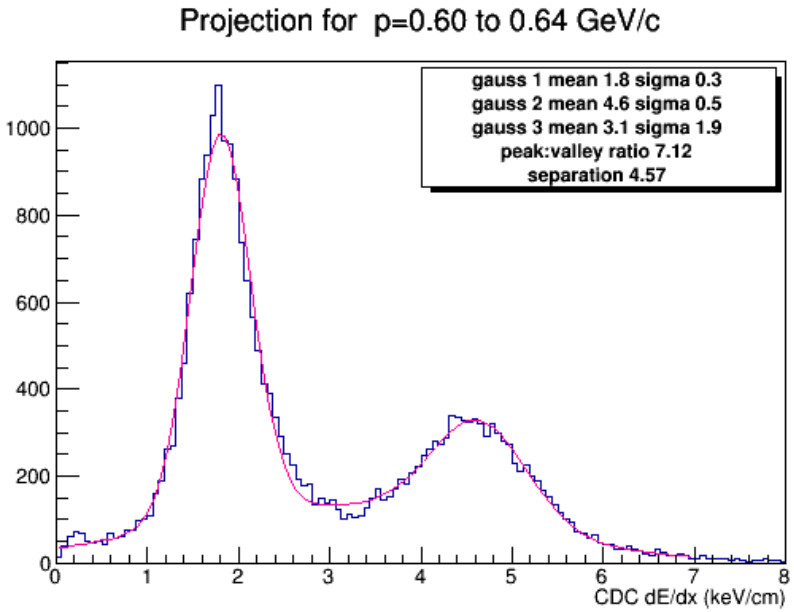

q+ dE/dx using integral, truncation 20%
CDC dE/dx (keV/cm)
p (GeV/c)

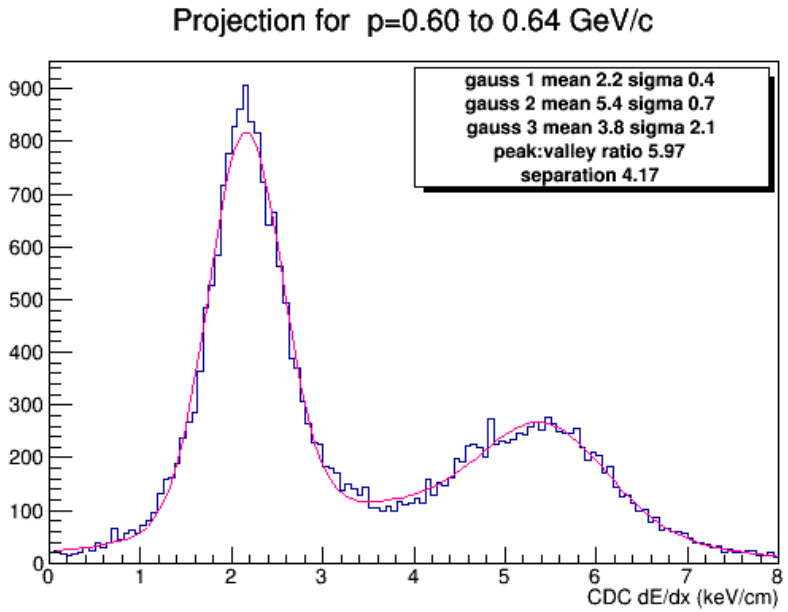

Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 1.8 sigma 0.3
gauss 2 mean 4.7 sigma 0.5
gauss 3 mean 2.9 sigma 1.8
peak:valley ratio 7.25
separation 4.60
CDC dE/dx (keV/cm)


Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 2.2 sigma 0.4
gauss 2 mean 5.4 sigma 0.6
gauss 3 mean 3.8 sigma 2.0
peak:valley ratio 6.63
separation 4.44
CDC dE/dx (keV/cm)

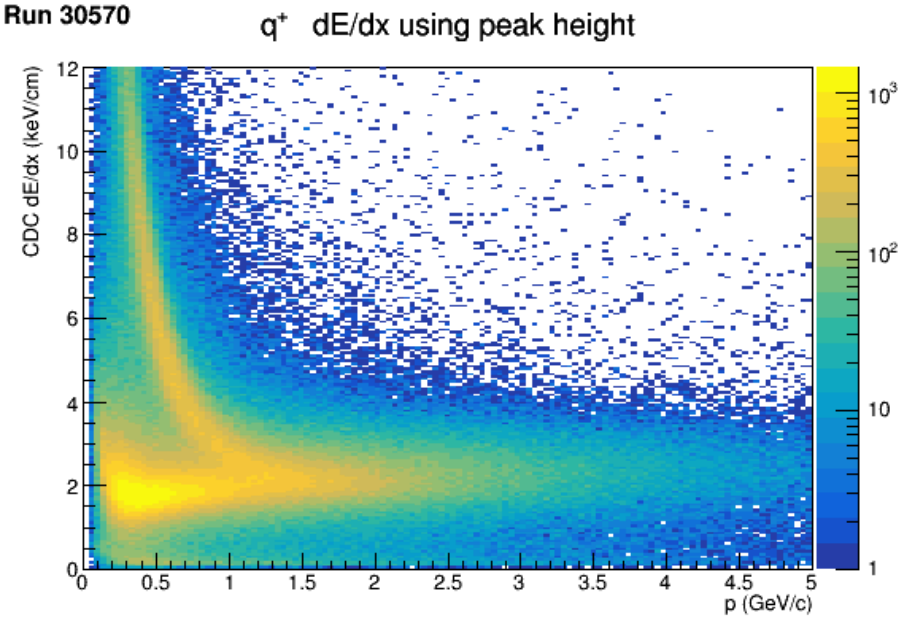

Run 31001
q+ dE/dx using peak height instead of integral
CDC dE/dx (keV/cm)
p (GeV/c)

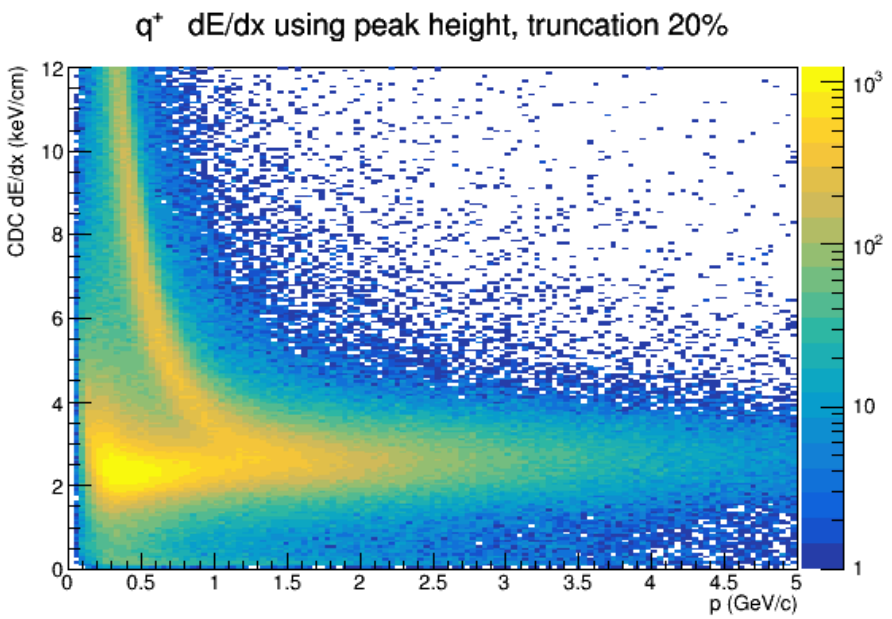

q+ dE/dx using integral, truncation 20%
CDC dE/dx (keV/cm)
p (GeV/c)

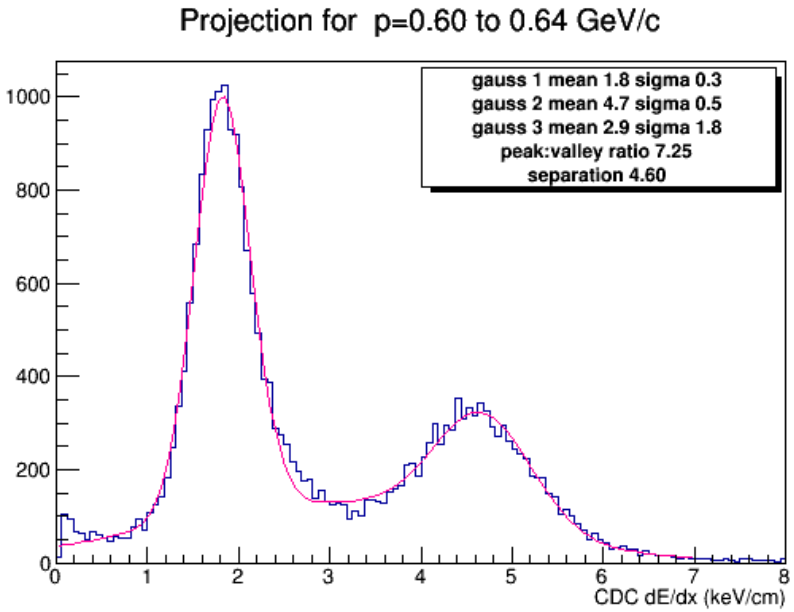

Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 1.8 sigma 0.3
gauss 2 mean 4.6 sigma 0.5
gauss 3 mean 3.1 sigma 1.9
peak:valley ratio 7.12
separation 4.57
CDC dE/dx (keV/cm)

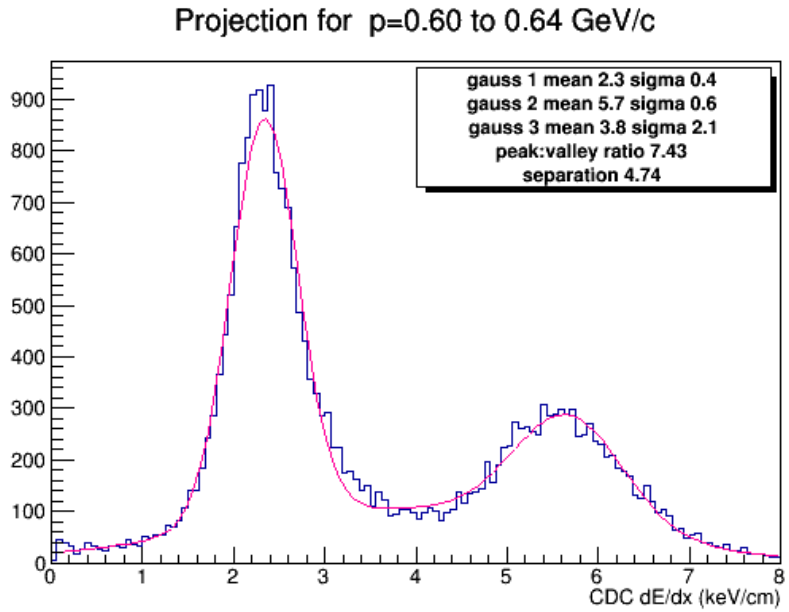

Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 2.2 sigma 0.4
gauss 2 mean 5.4 sigma 0.7
gauss 3 mean 3.8 sigma 2.1
peak:valley ratio 5.97
separation 4.17
CDC dE/dx (keV/cm)

Run 30570

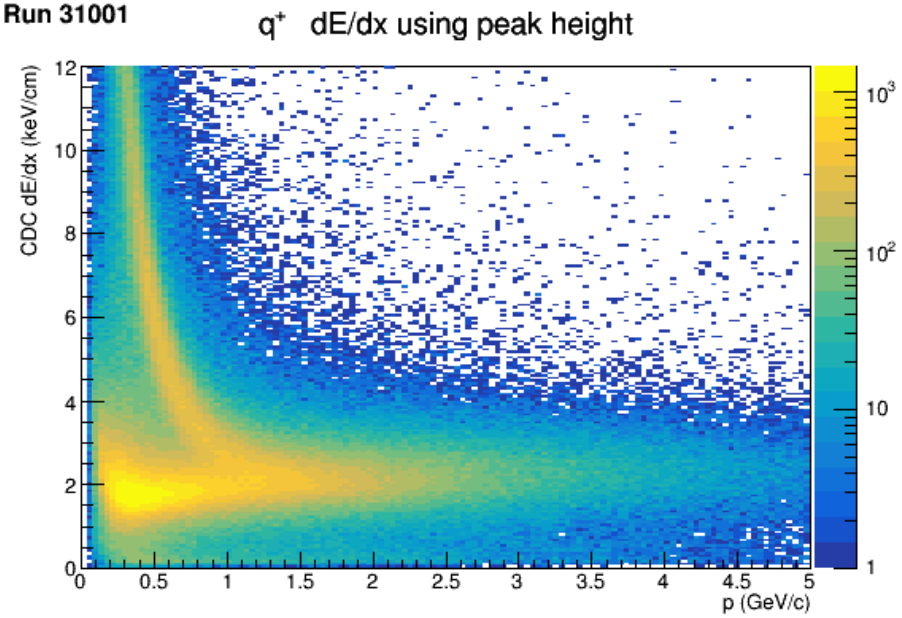

q⁺ dE/dx using peak height
CDC dE/dx (keV/cm)
p (GeV/c)

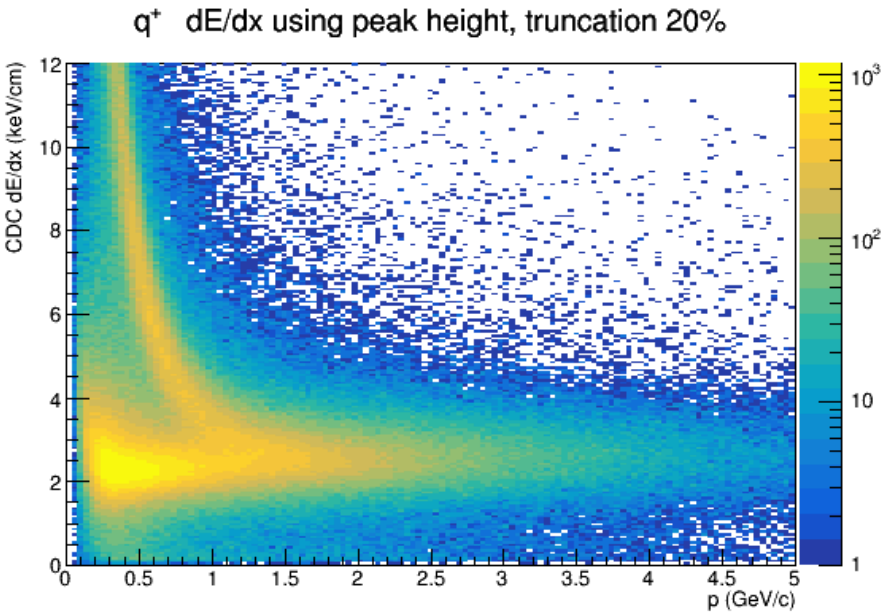

q⁺ dE/dx using peak height, truncation 20%
CDC dE/dx (keV/cm)
p (GeV/c)

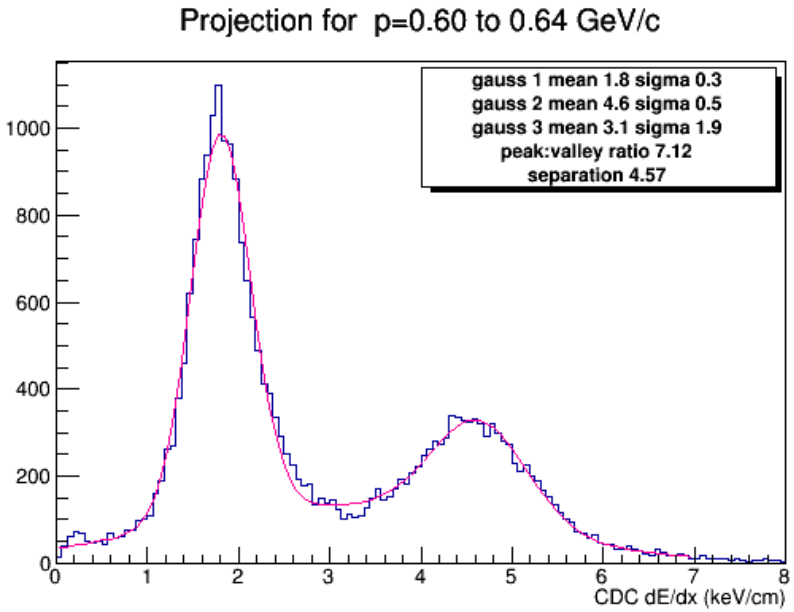

Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 1.8 sigma 0.3
gauss 2 mean 4.7 sigma 0.5
gauss 3 mean 2.9 sigma 1.8
peak:valley ratio 7.25
separation 4.60
CDC dE/dx (keV/cm)

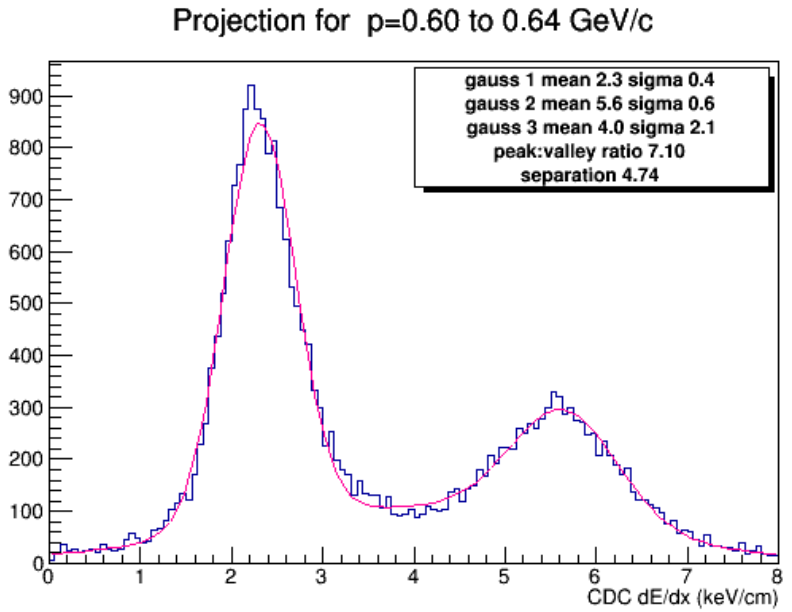

Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 2.3 sigma 0.4
gauss 2 mean 5.7 sigma 0.6
gauss 3 mean 3.8 sigma 2.1
peak:valley ratio 7.43
separation 4.74
CDC dE/dx (keV/cm)

Run 31001


q⁺ dE/dx using peak height
CDC dE/dx (keV/cm)
p (GeV/c)


q⁺ dE/dx using peak height, truncation 20%
CDC dE/dx (keV/cm)
p (GeV/c)


Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 1.8 sigma 0.3
gauss 2 mean 4.6 sigma 0.5
gauss 3 mean 3.1 sigma 1.9
peak:valley ratio 7.12
separation 4.57
CDC dE/dx (keV/cm)


Projection for p=0.60 to 0.64 GeV/c
gauss 1 mean 2.3 sigma 0.4
gauss 2 mean 5.6 sigma 0.6
gauss 3 mean 4.0 sigma 2.1
peak:valley ratio 7.10
separation 4.74
CDC dE/dx (keV/cm)

Compare the two later runs with similar conditions:

5mm collimator, 58um diamond 1350A solenoid

Run	Event rate	dE/dx from integral, 50% trunc, Separation	dE/dx from integral, 20% trunc, Separation	dE/dx from amplitude, 50% trunc, Separation	dE/dx from amplitude, 20% trunc, Separation
30570	33kHz	3.8	4.4	4.6	4.7
31001	50kHz	3.5	4.2	4.6	4.7