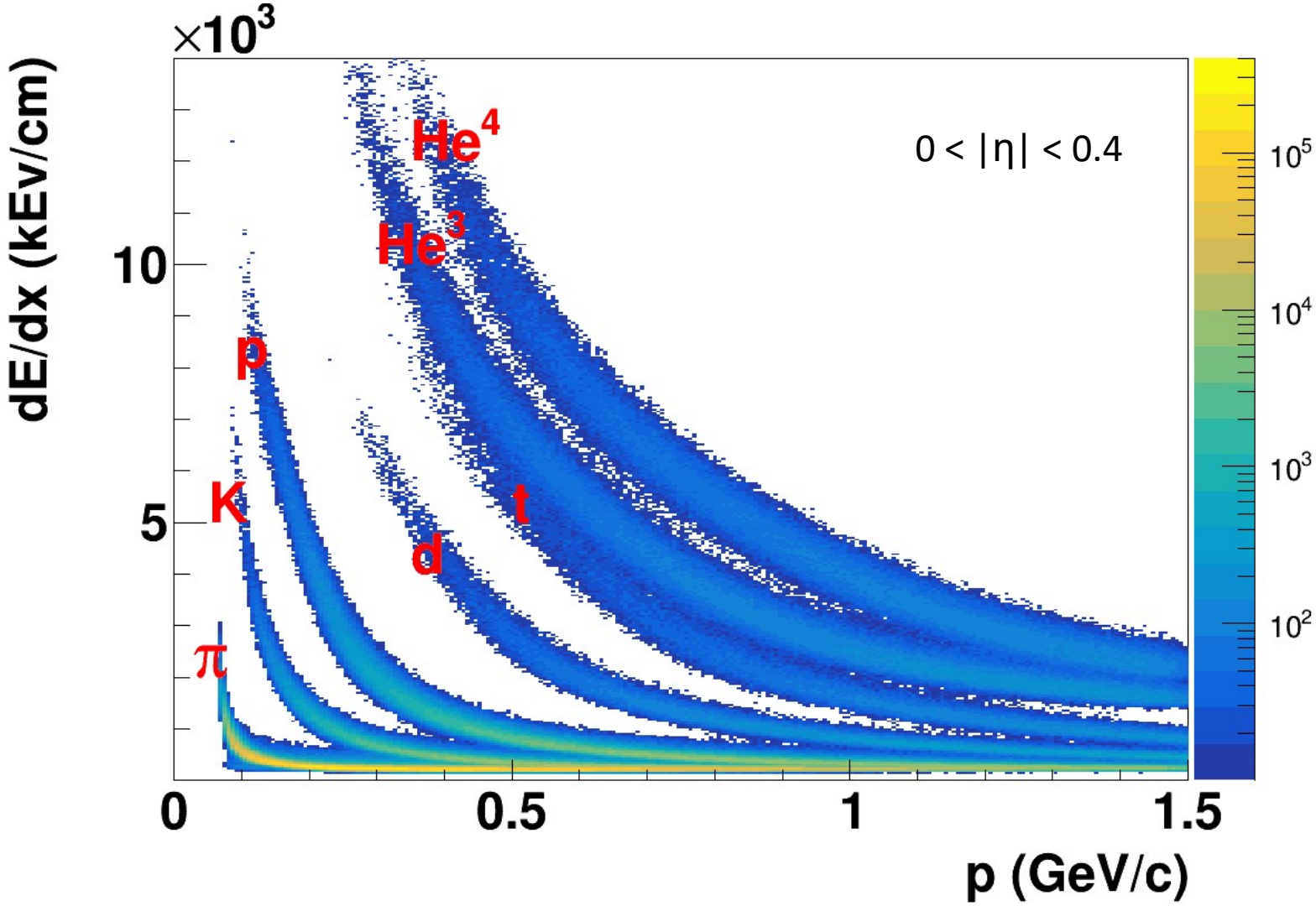
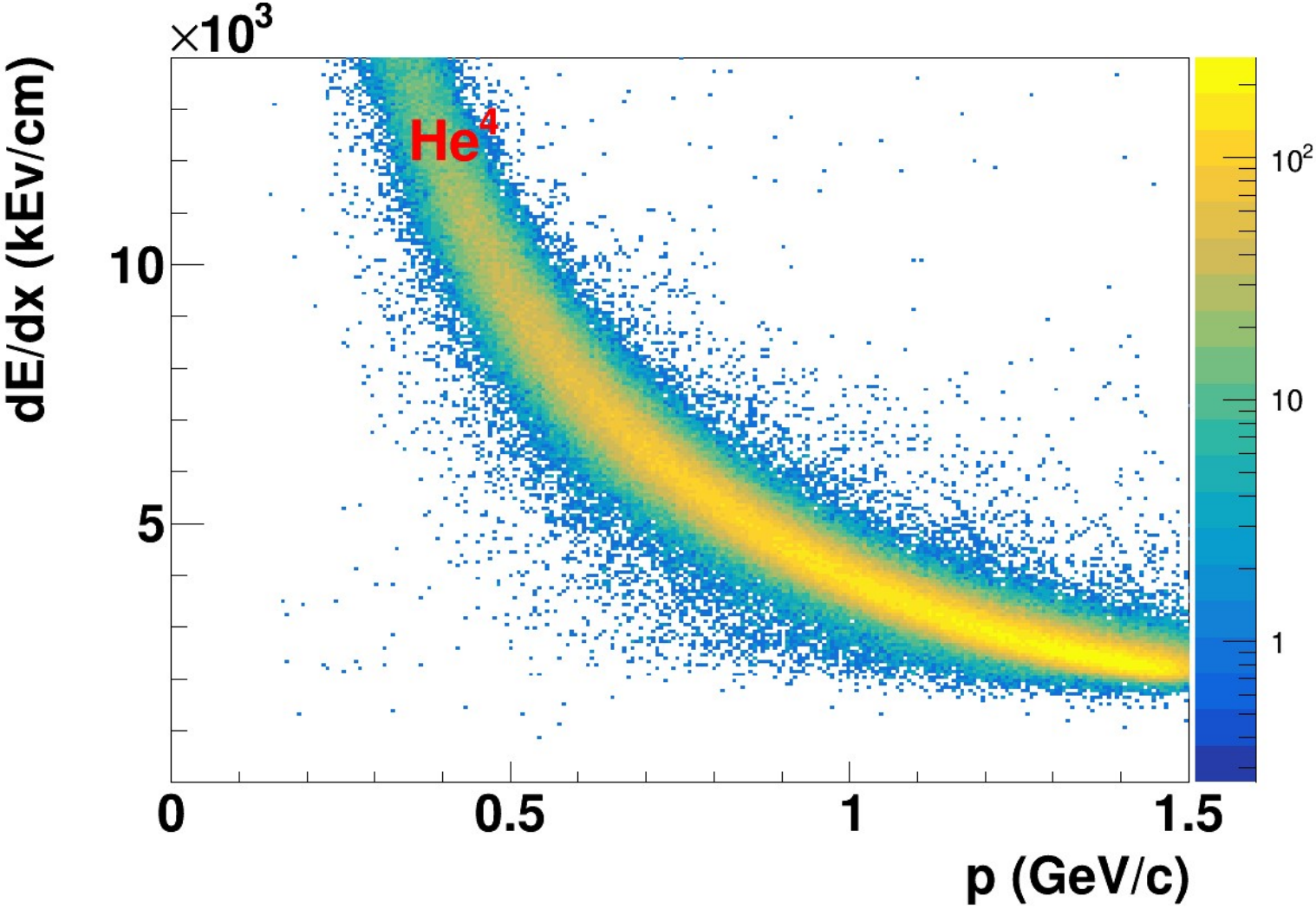
DATA SET

- 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)
- $N_{hits} \geq 20$
- Midrapidity region ($|\eta| < 0.4$)

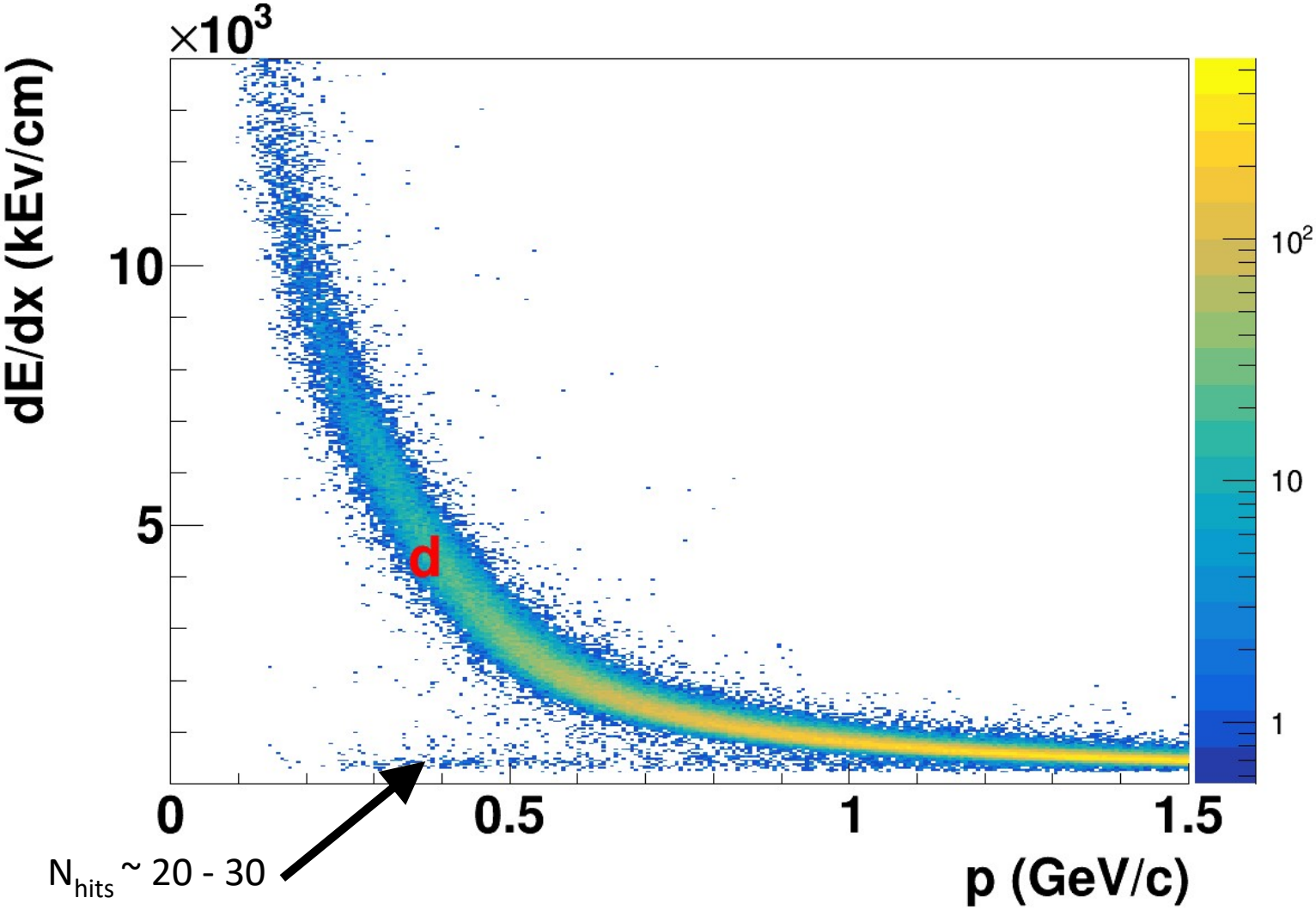
dE/dx VS p


×10^3
dE/dx (kEv/cm)
10
5
He^4
He^3
p
K
π
t
d
0 < |η| < 0.4
10^5
10^4
10^3
10^2
0
0.5
1
1.5
p (GeV/c)

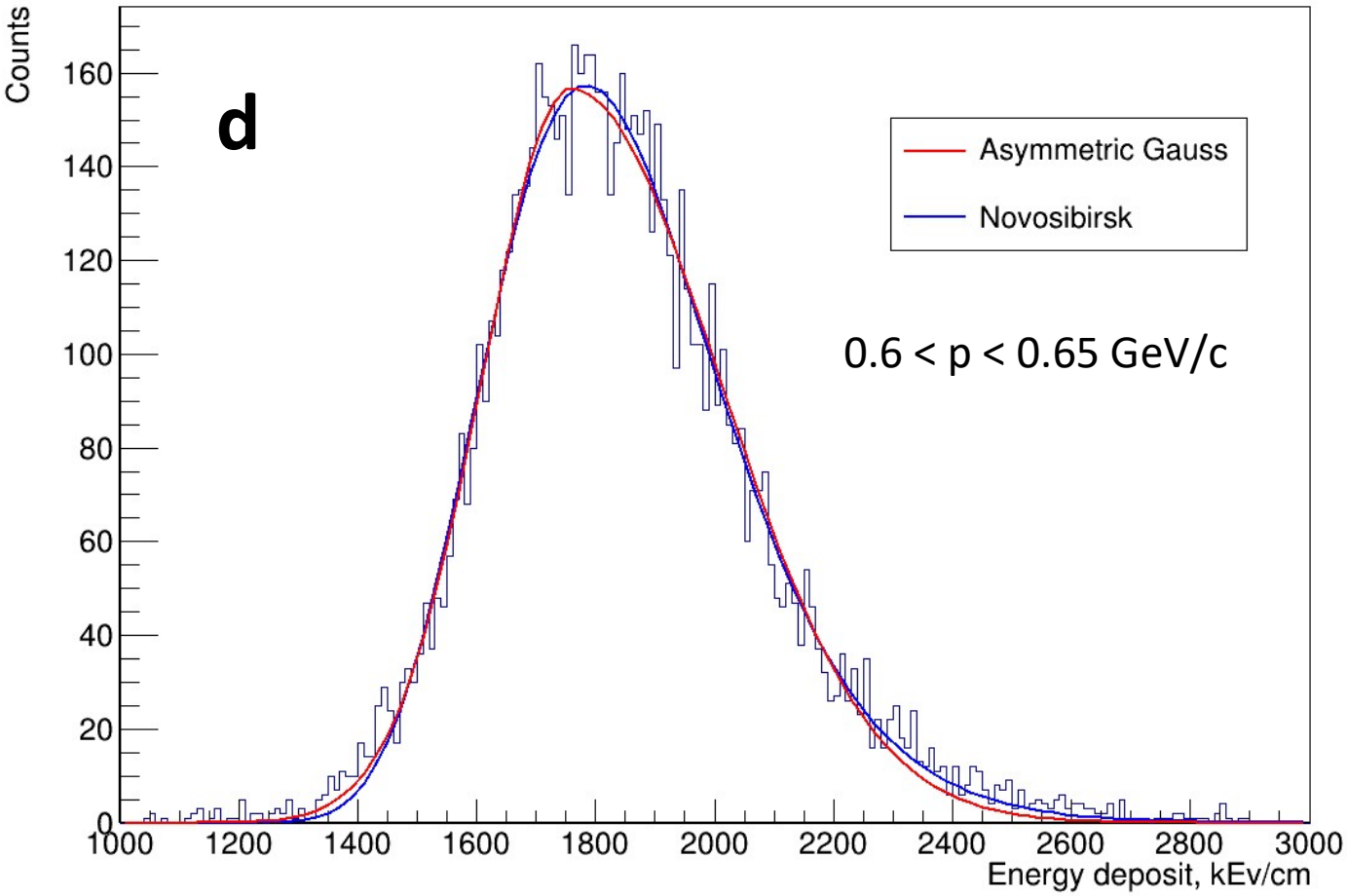
dE/dx VS p



dE/dx VS p

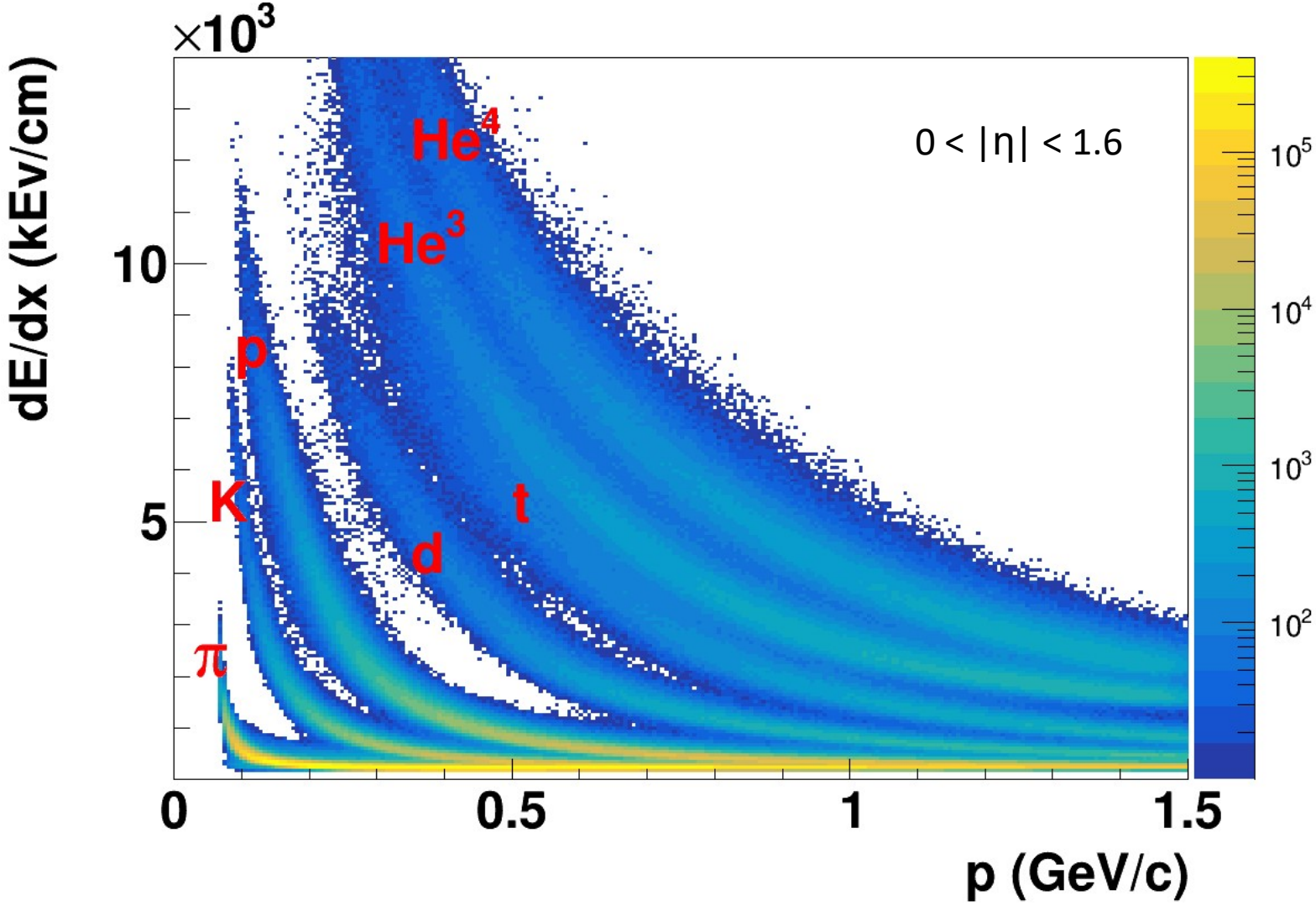


Shape of dE/dx distribution

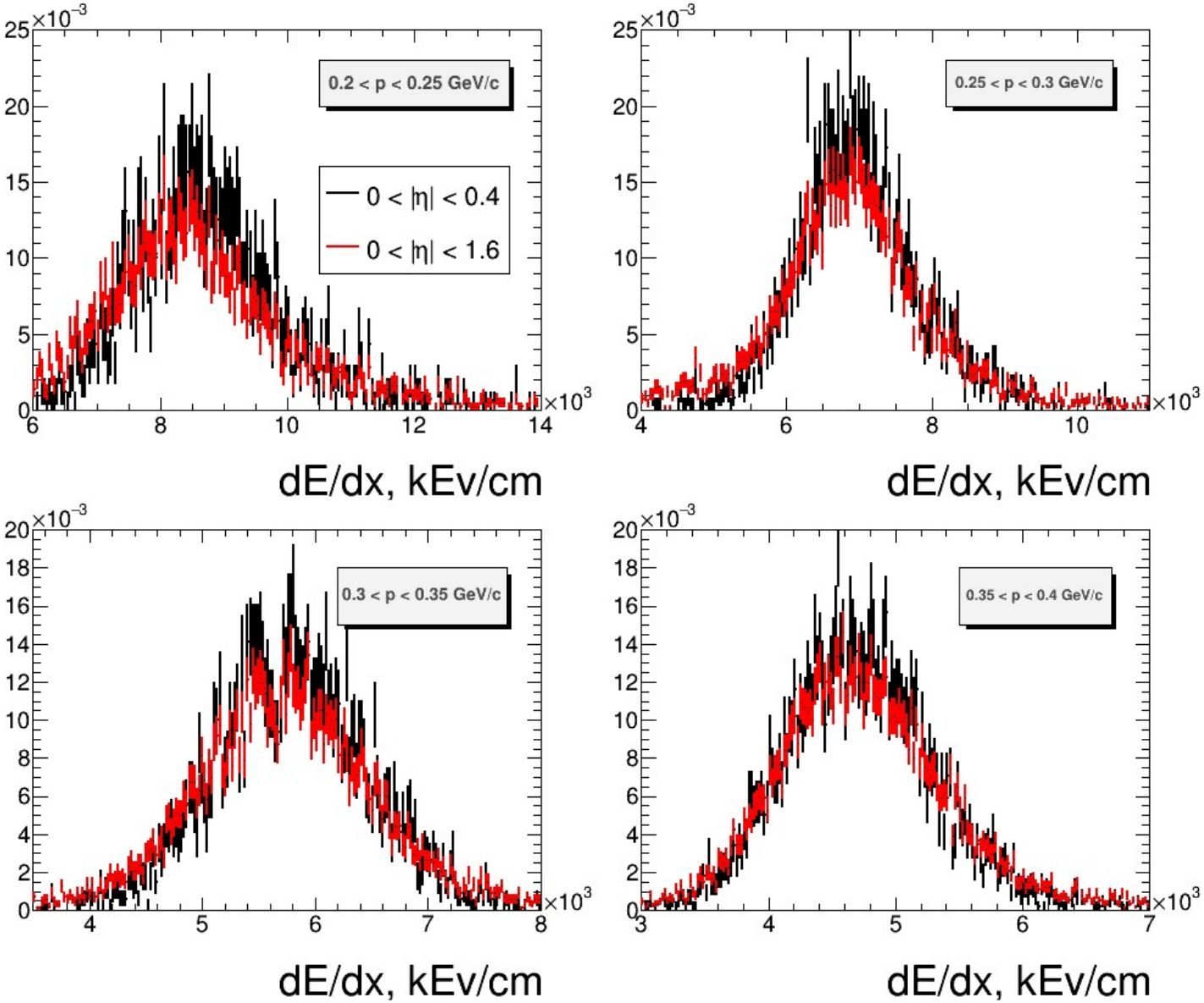


Generalized Gaussian Function - ?

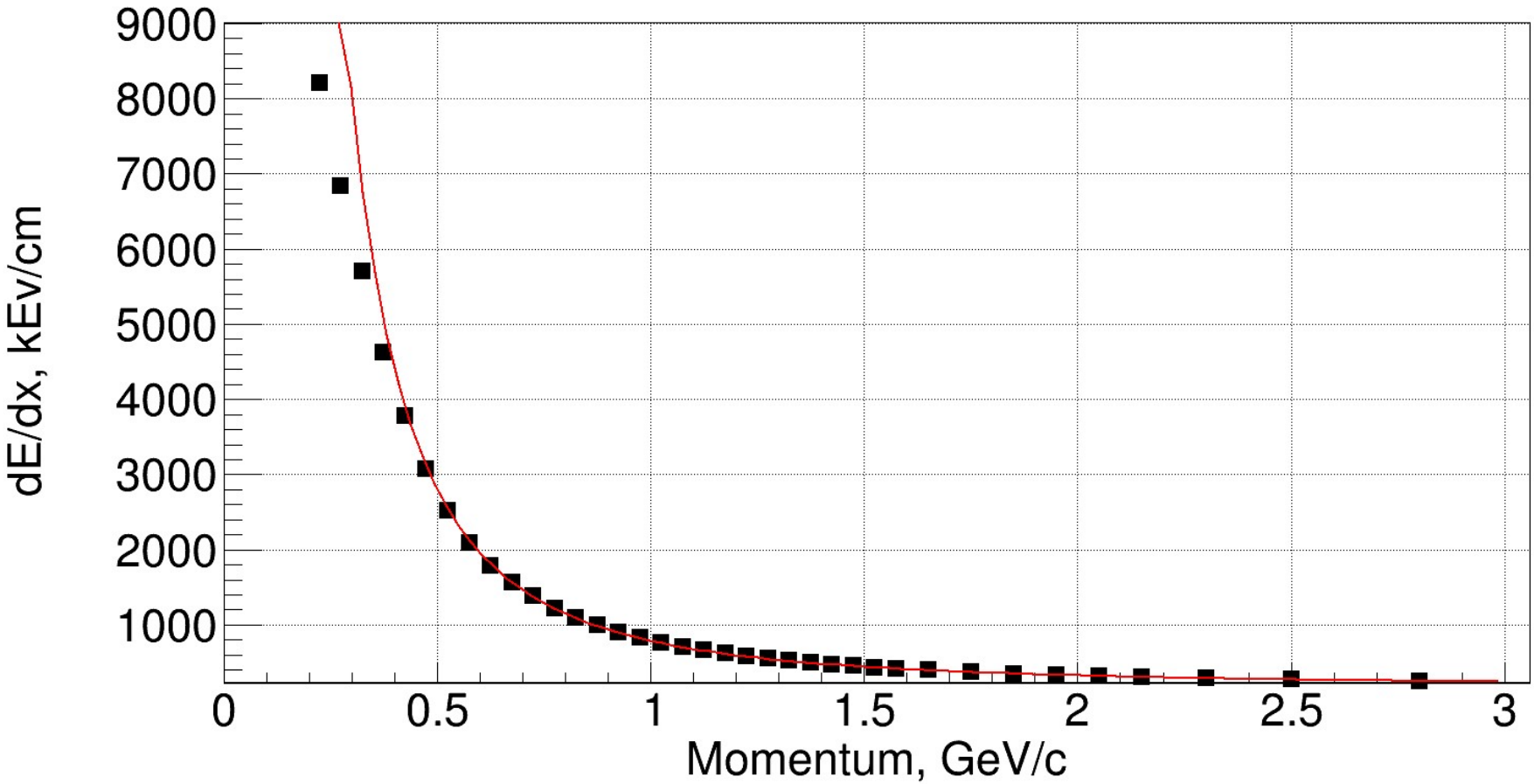
dE/dx VS p


×10^3
dE/dx (kEv/cm)
10
5
0
0.5
1
1.5
p (GeV/c)
He^4
He^3
p
K
t
d
π
0 < |η| < 1.6
10^5
10^4
10^3
10^2

dE/dx shape comparison (*d*)



<dE/dx> VS p (*d*)


9000
8000
7000
6000
5000
4000
3000
2000
1000
dE/dx, kEv/cm
0
0.5
1
1.5
2
2.5
3
Momentum, GeV/c

Summary

- Minimum number of hits N_{hits} = 20 is enough to guarantee an efficient dE/dx reconstruction
- dE/dx reconstruction is uniform at pseudorapidity region of $0 < |\eta| < 1.6$. However, at the higher eta it should be checked
- Asymmetric dE/dx distribution can be parameterized via 3 different functions. The standard “Asymmetric Gaussian” function describes the shape worse than “Novosibirsk” and, likely, GGF.