p-X-p Analysis - Kshorts

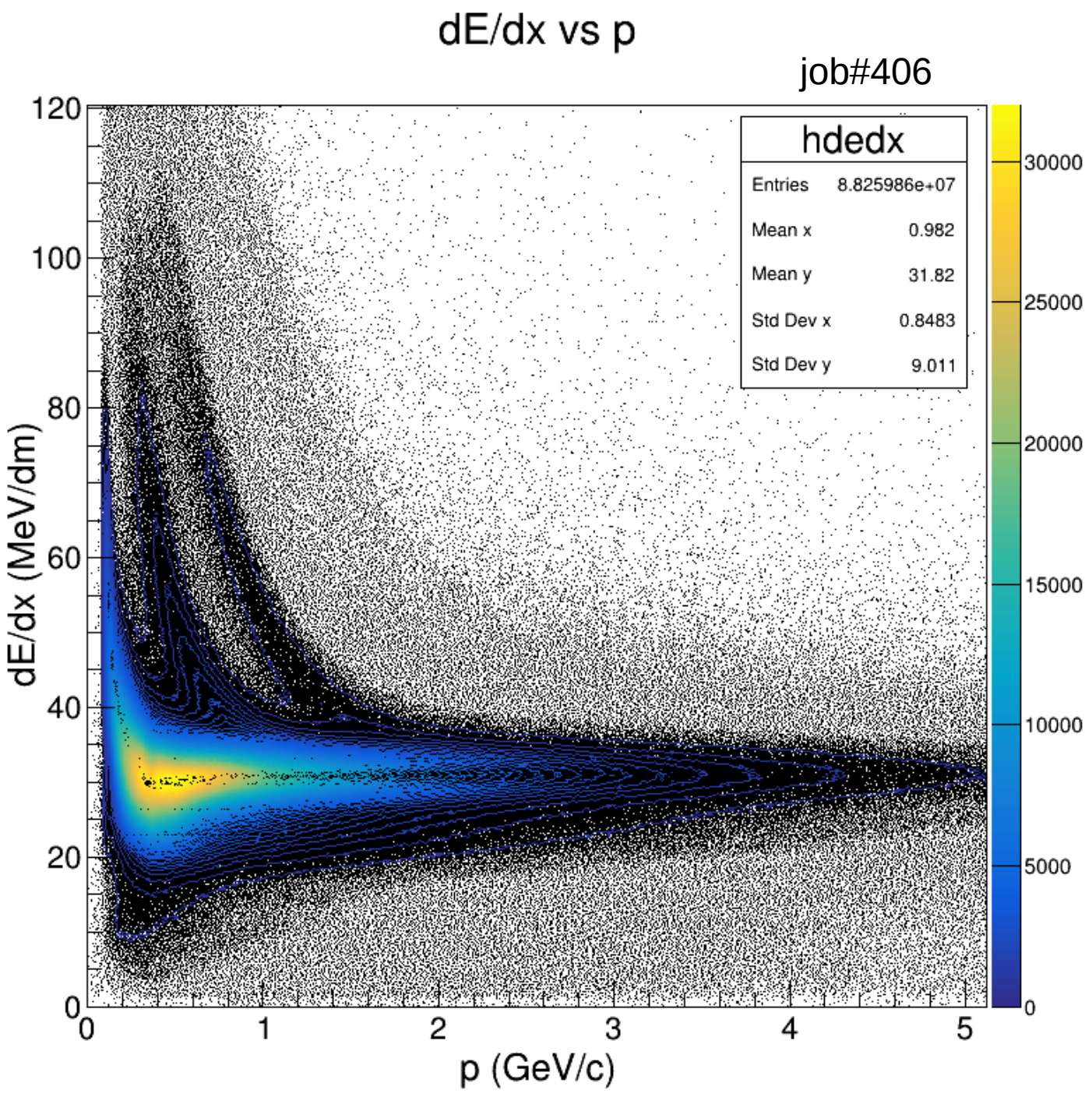
dE/dx efficiency

entire 2015 data

4-track events

type:02 events – K0sK0s

type:11 events – K0sK*


dE/dx vs p
job#406
hdedx
Entries 8.825986e+07
Mean x 0.982
Mean y 31.82
Std Dev x 0.8483
Std Dev y 9.011
dE/dx (MeV/dm)
p (GeV/c)
0
20
40
60
80
100
120
0
1
2
3
4
5
0
5000
10000
15000
20000
25000
30000

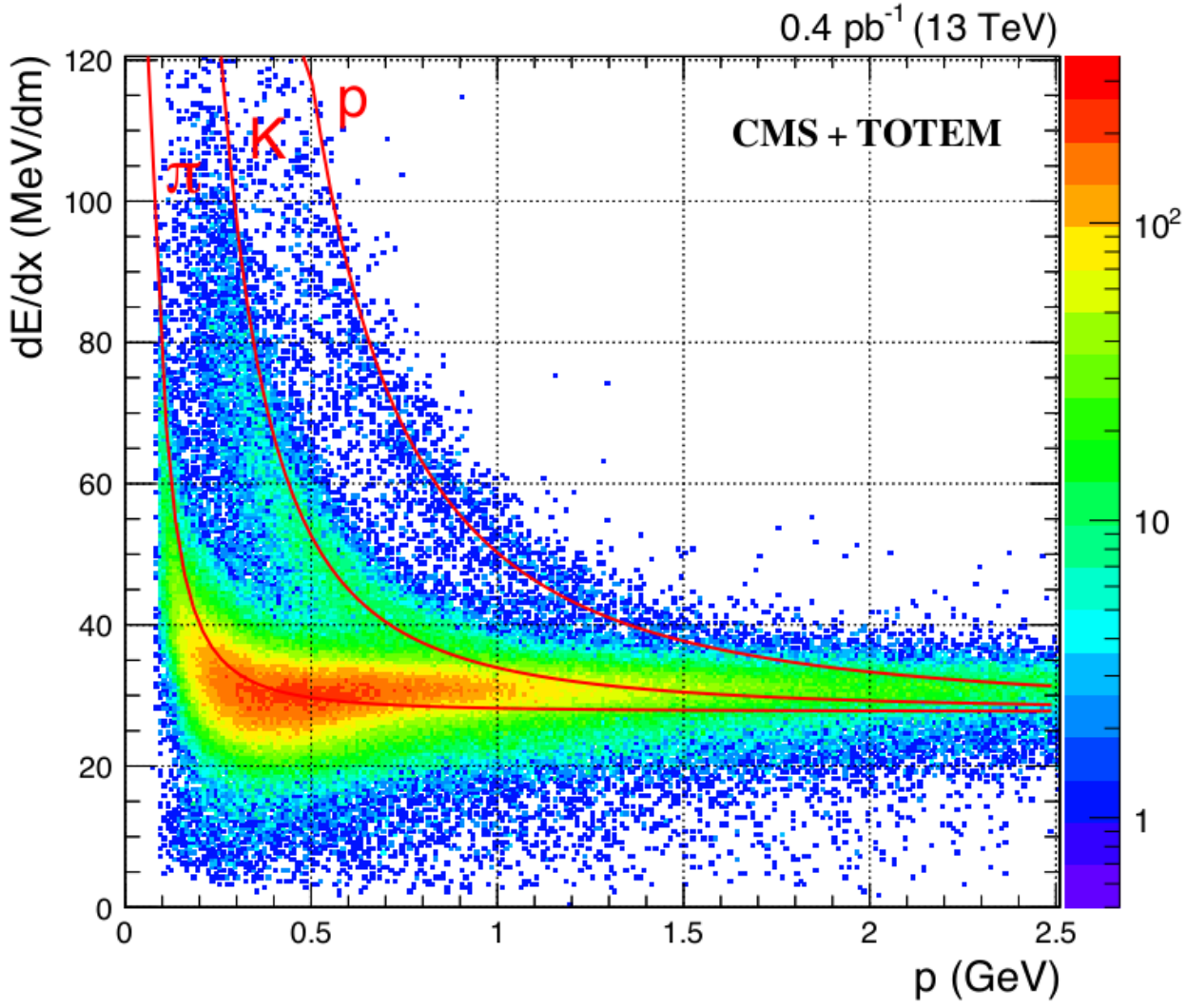


Figure 13: Distribution of the track energy loss dE/dx versus momentum, for tracks in the four-track sample. Solid (red) lines, corresponding to a simplified parameterization of the mean energy loss for pions, kaons and protons [51], are shown to guide the eye.

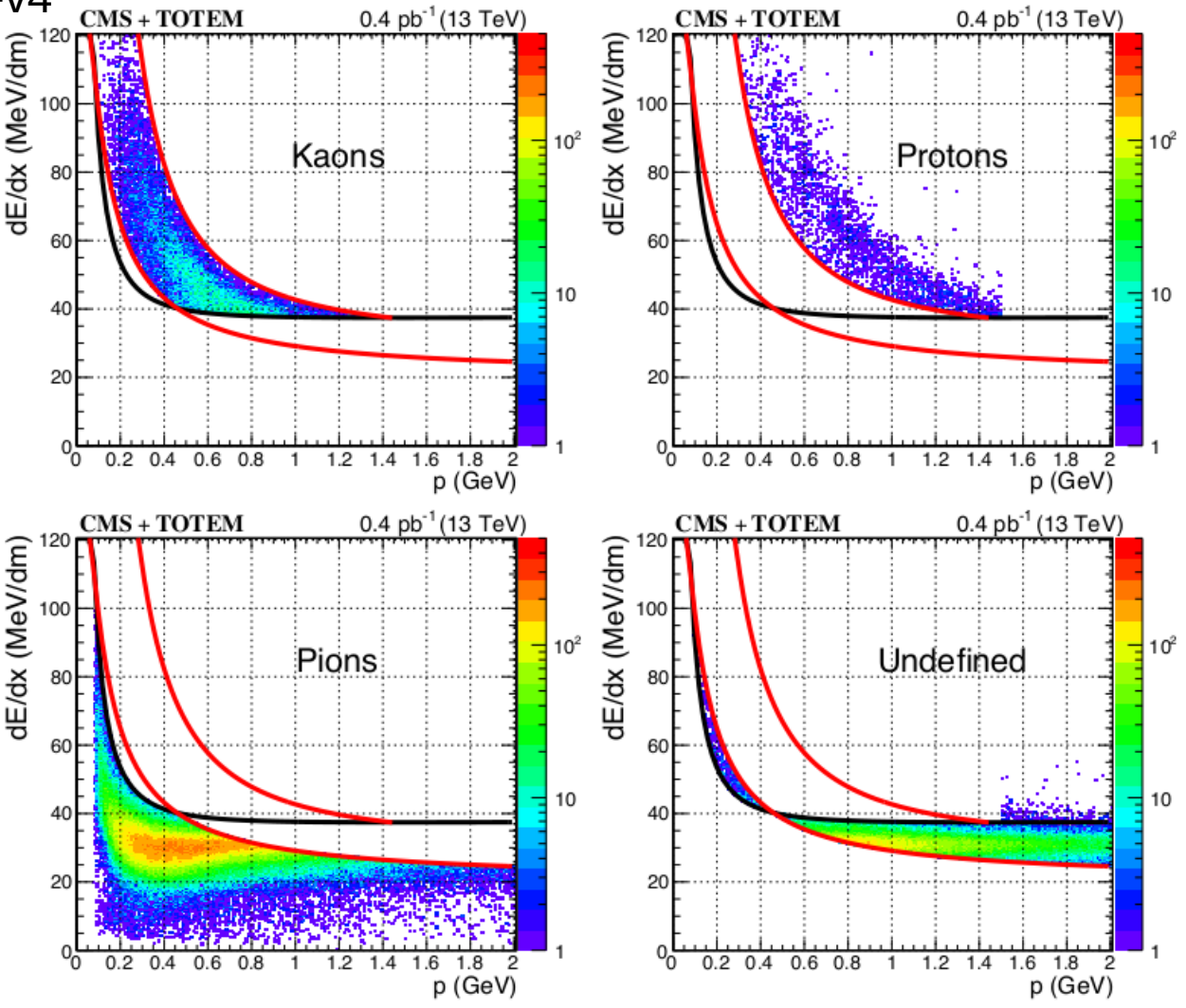


Figure 17: Particle identification in the dE/dx vs p space. Entries populate regions, in which tracks are classified as pions (**bottom left**), kaons (**top left**), protons (**top right**), or remain undefined (**bottom right**). Red curves bracket the $\pm 2.56\sigma$ region around the kaon average dE/dx, while the black curve marks the $+2.56\sigma$ bound above the pion average dE/dx.

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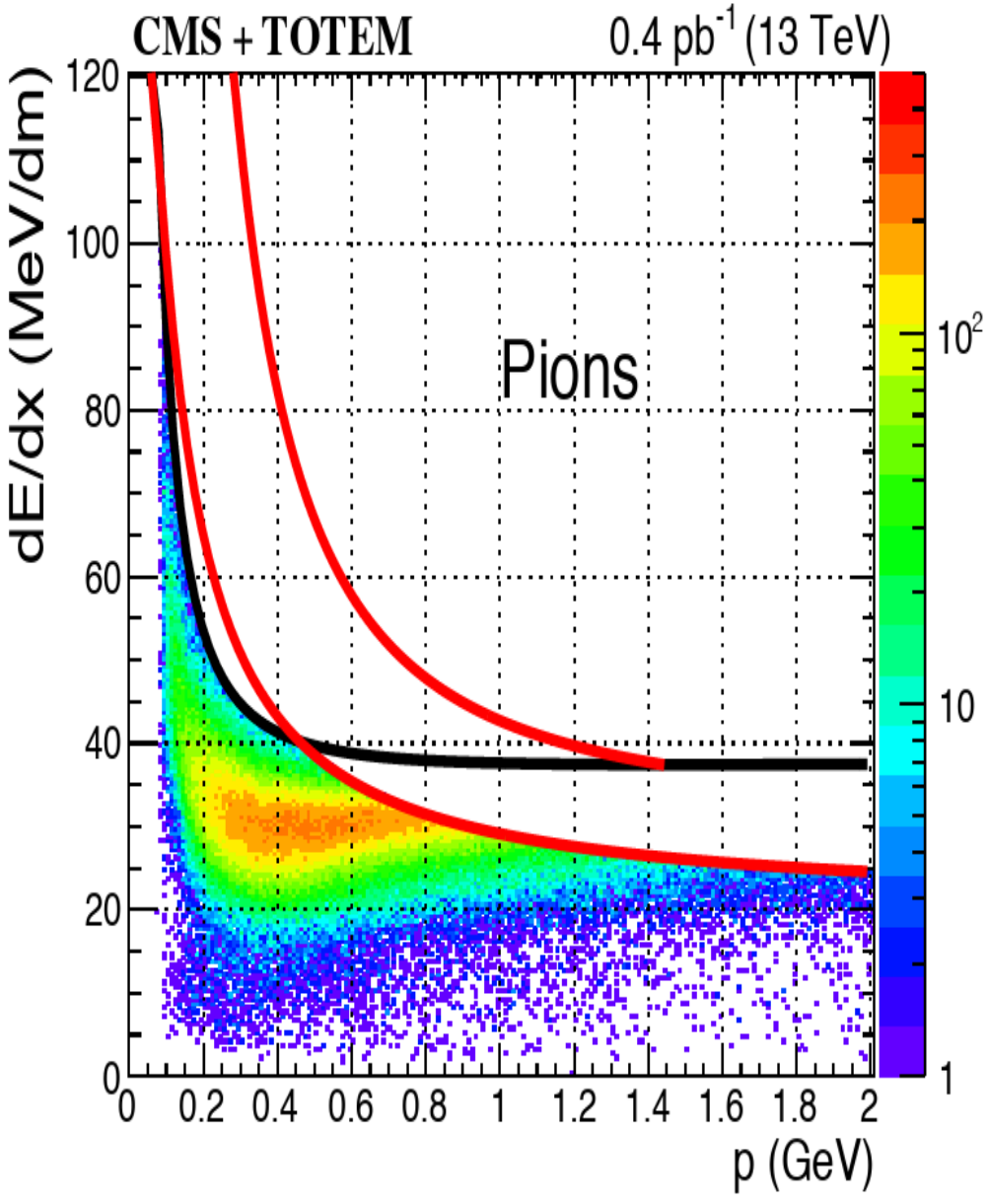
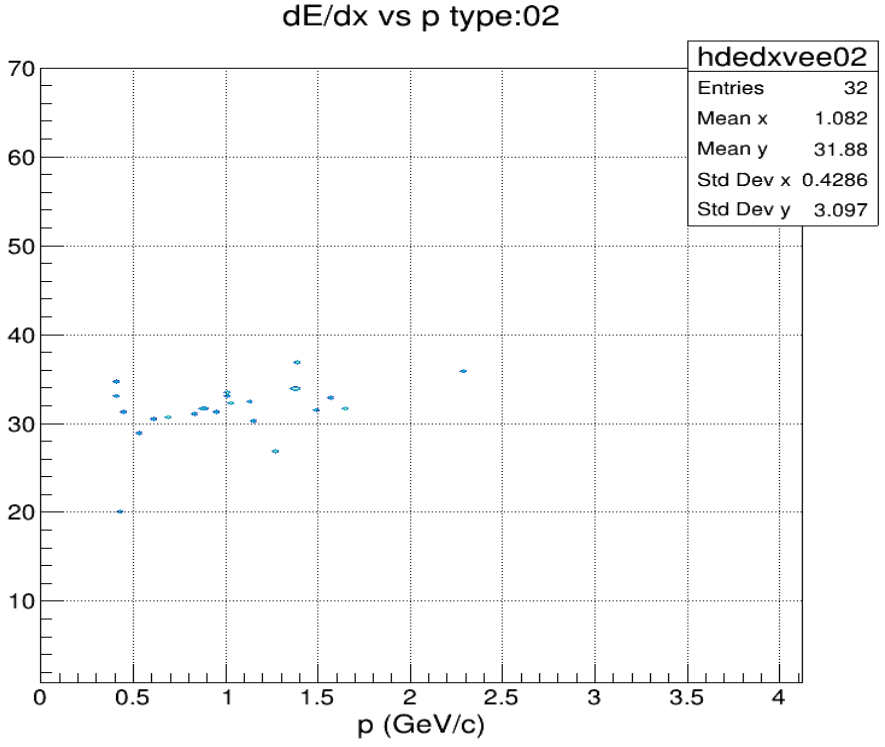


entries = tracks
4-track events
32 entries = 8 events
type:02 events
no primary & 2 Vees

dE/dx algorithm is killing the K0sK0s events



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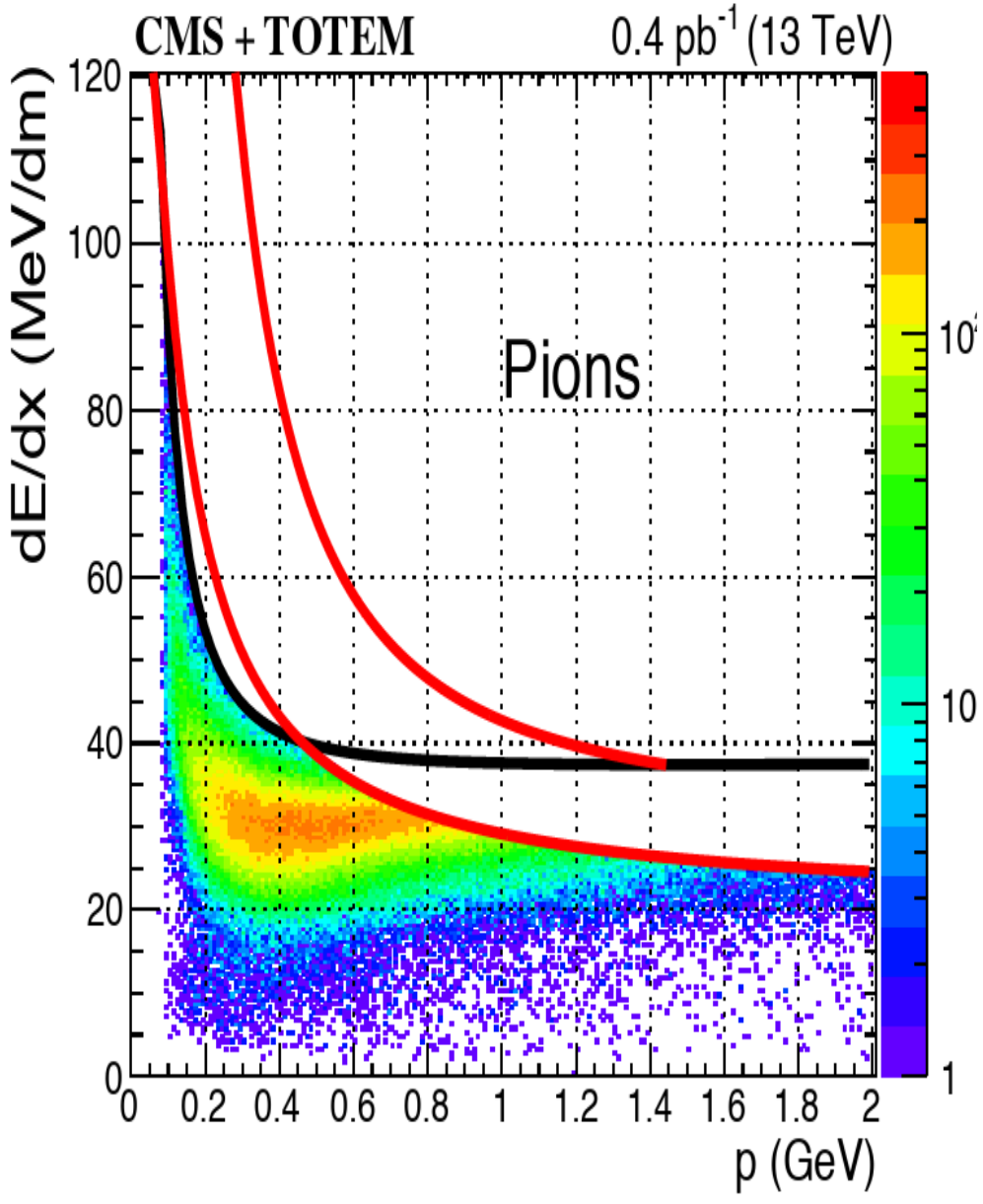
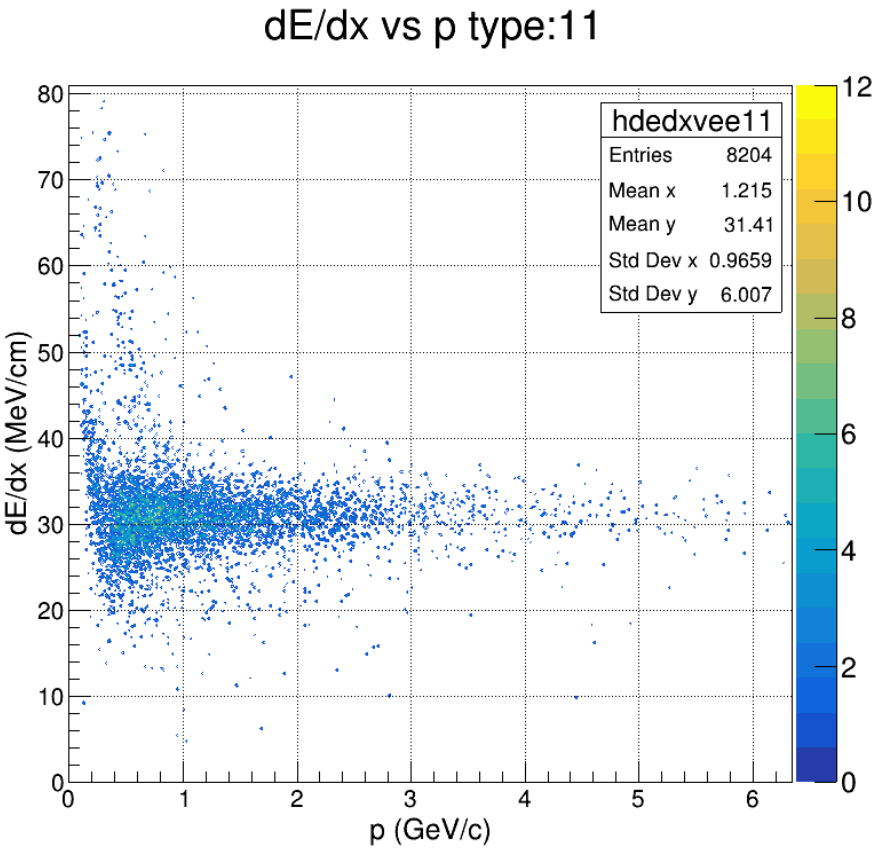


entries = tracks 4-track events
8204 entries = 2051 events
type:11 events
1 primary & 1 Vee

dE/dx algorithm is rejecting most of the K0sK* events



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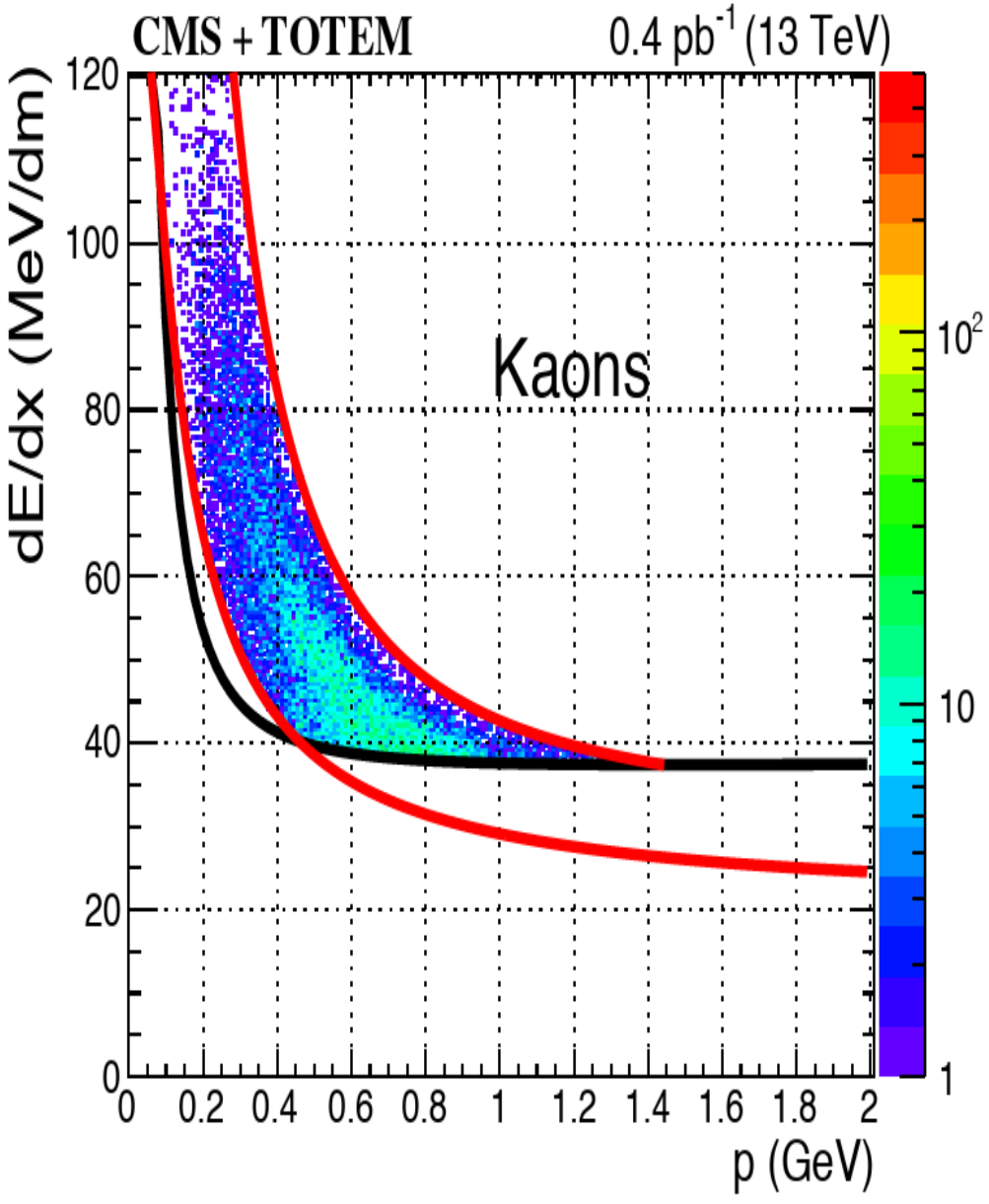
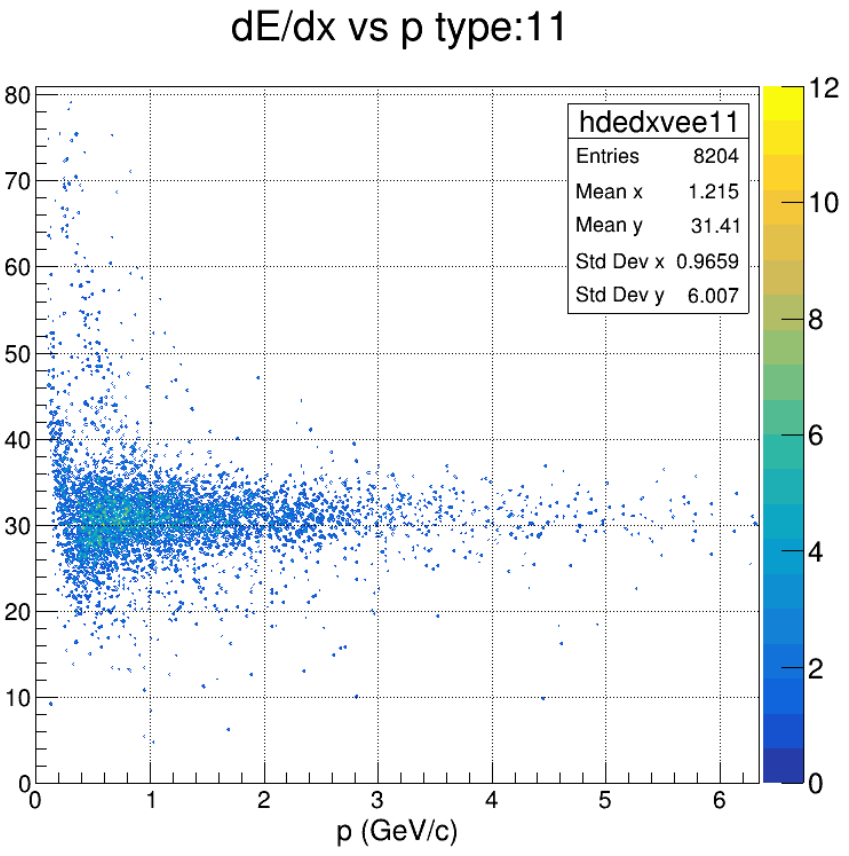
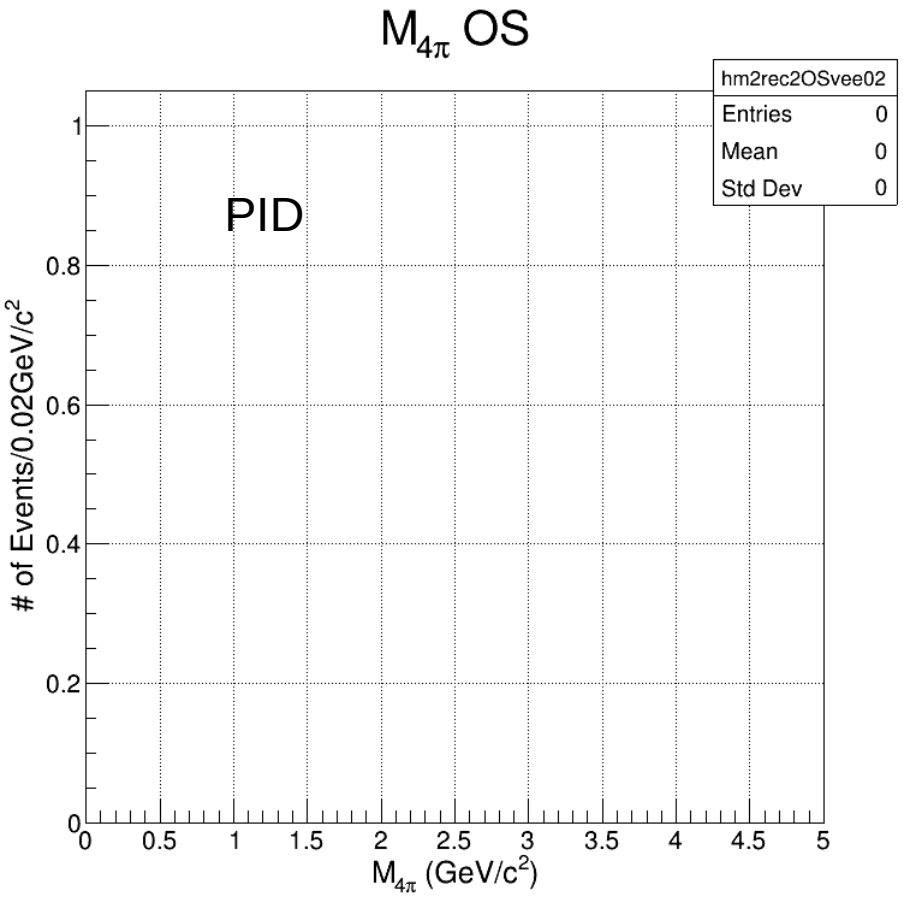


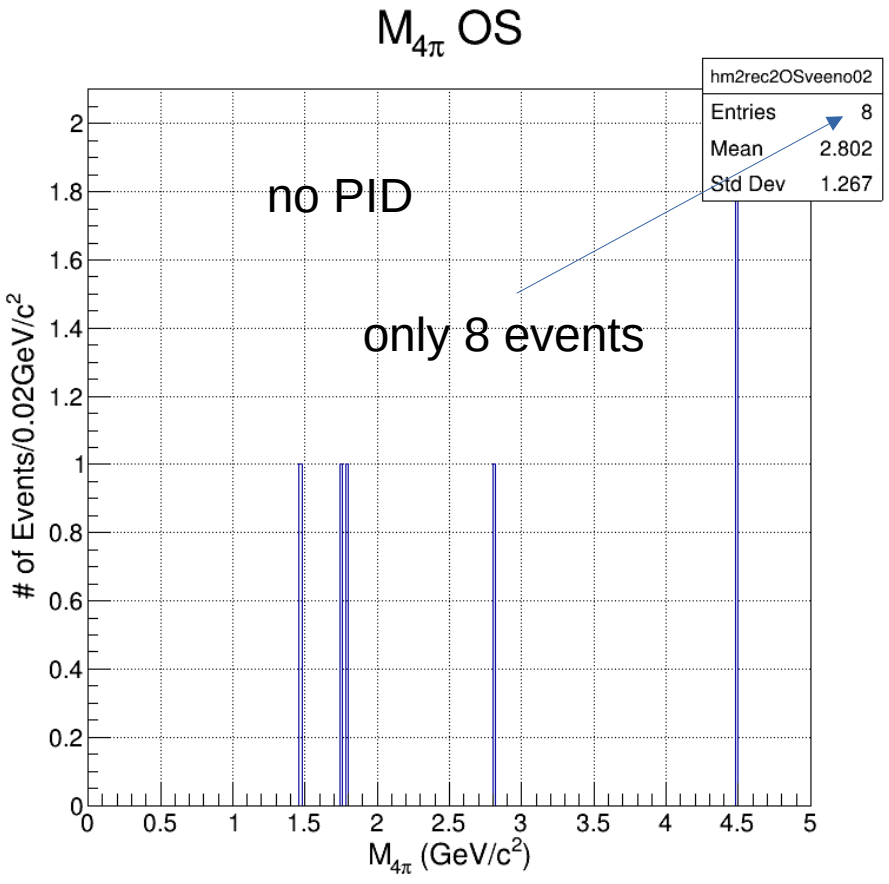
entries = tracks 4-track events
8204 entries = 2051 events
type:11 events
1 primary & 1 Vee

dE/dx algorithm is rejecting many of the K0sK* events

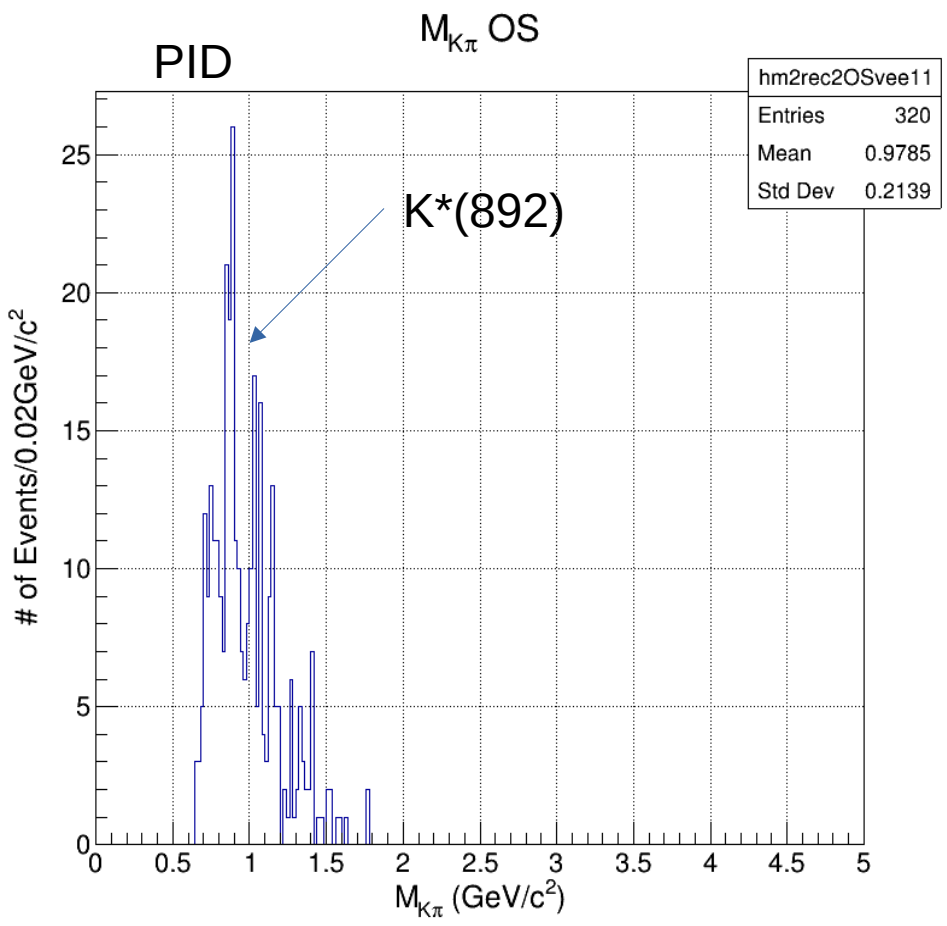


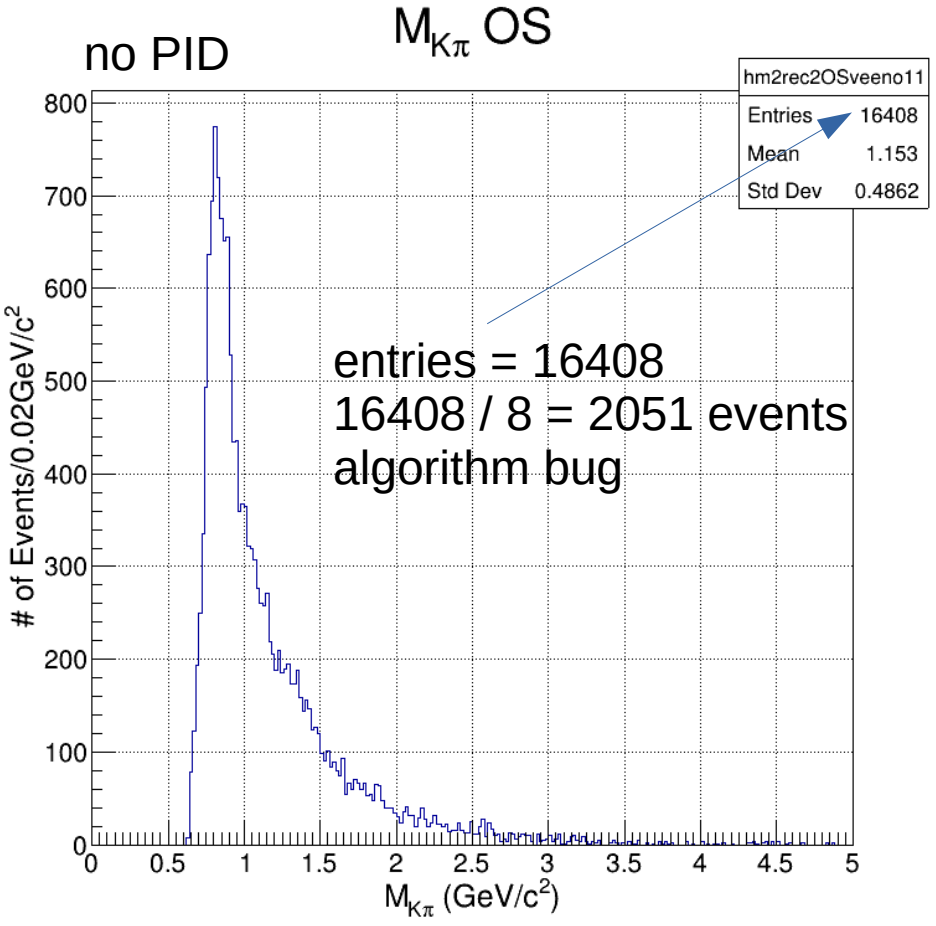
type:02 events – K0sK0s



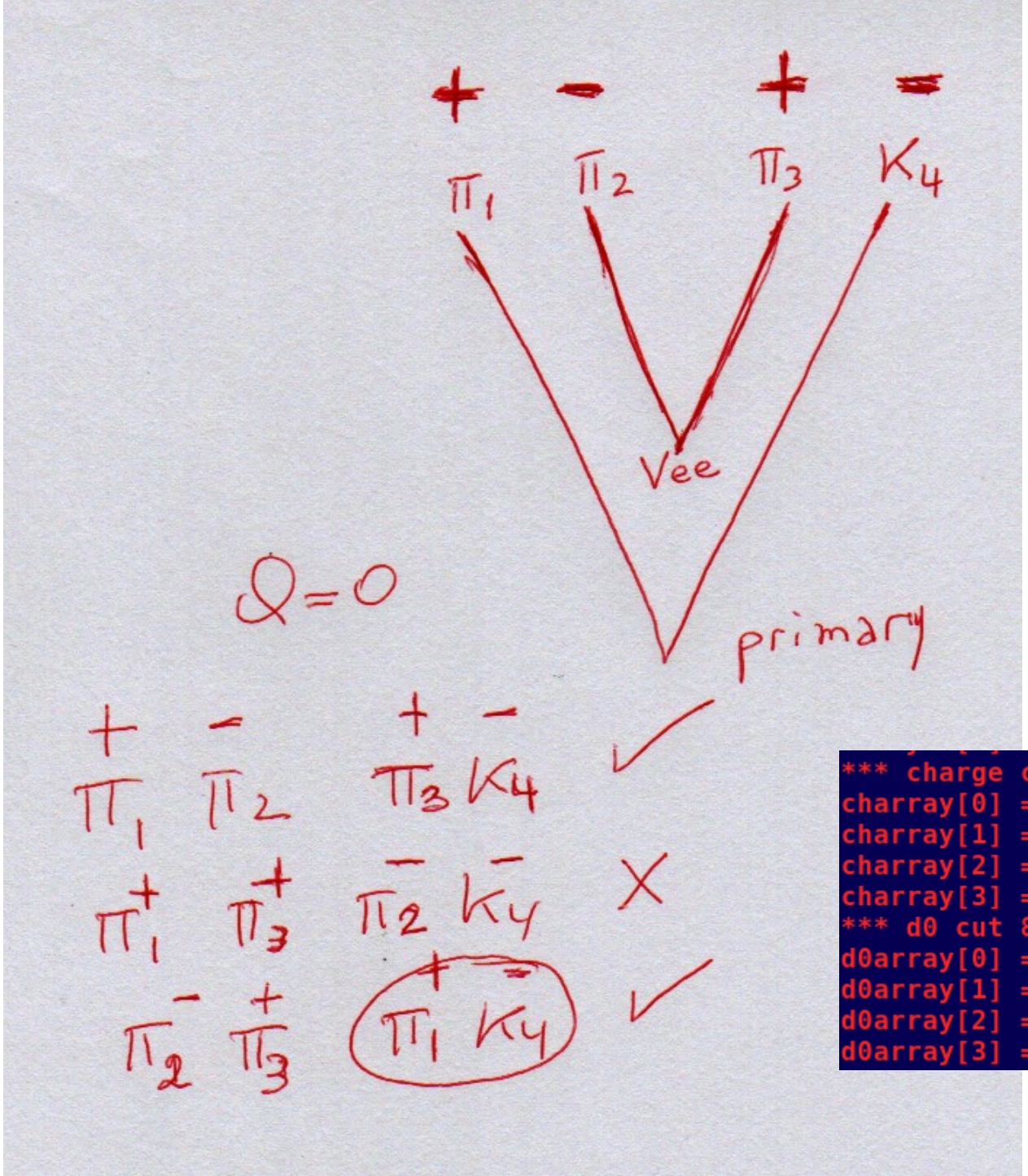


type:11 events – K0sK*





inconsistency




```
*** charge cut 8 vee02 ***
charray[0] = 1
charray[1] = -1
charray[2] = -1
charray[3] = 1
*** d0 cut 8 vee02 ***
d0array[0] = -0.768375
d0array[1] = 0.893982
d0array[2] = -0.166345
d0array[3] = -0.0452867
```