K0sK0s channel – 2018 data

sample t40 job#1

1. mass distribution via Kalman fitter
2. mass distribution via M(K0) window

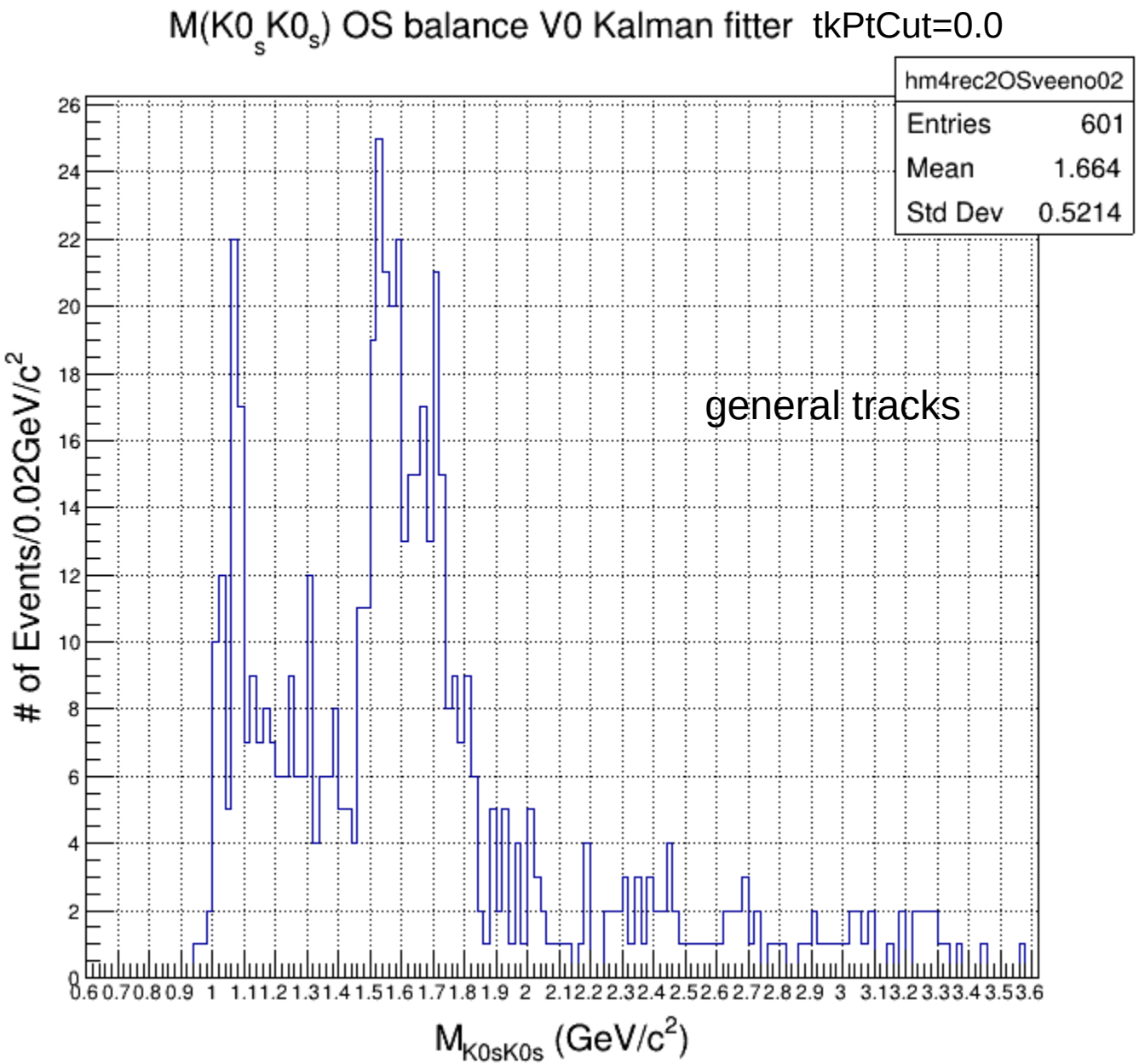
t2 = TB/BT

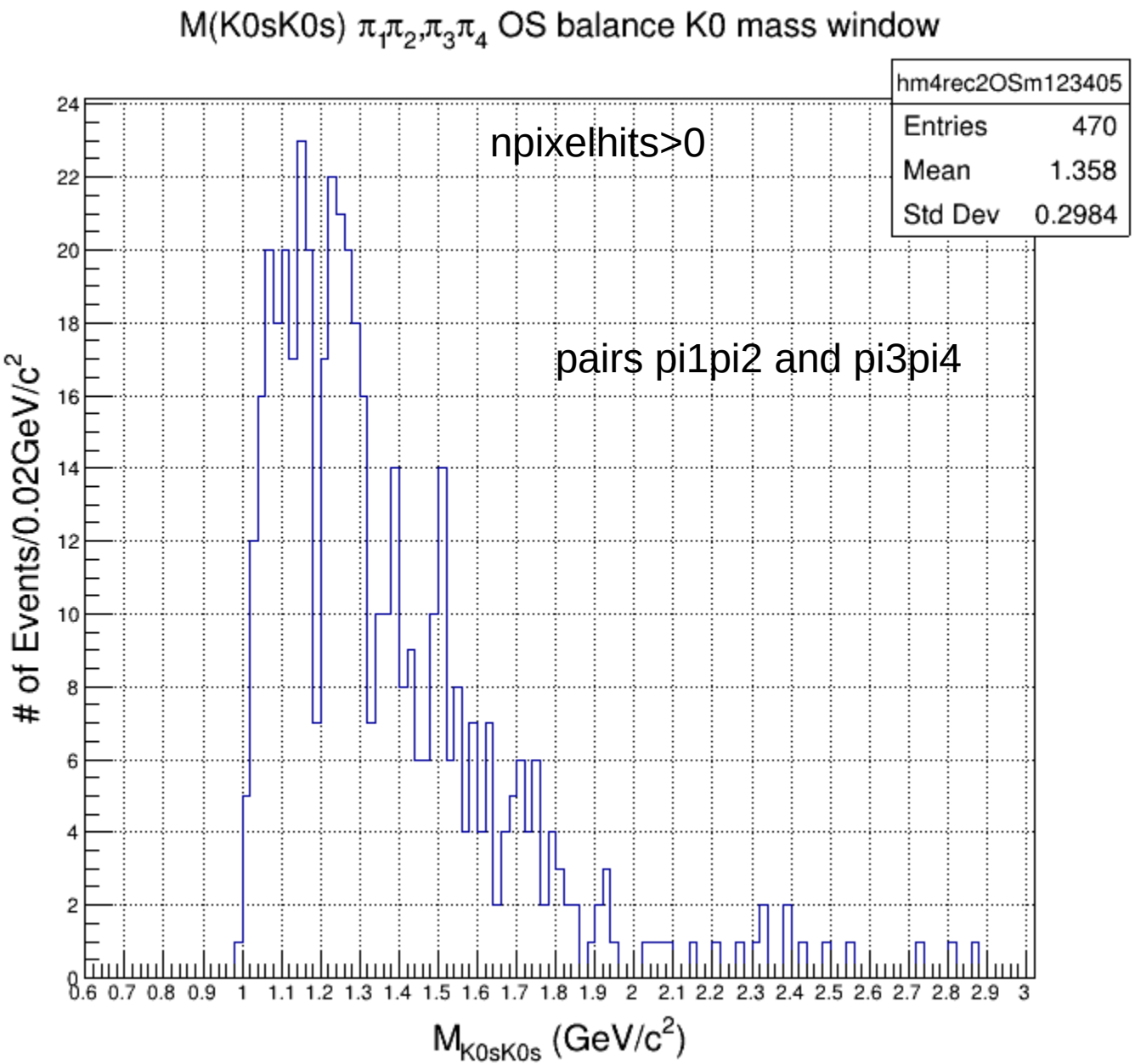
t200, t201, t210, t211, t220, t221, t230, t231

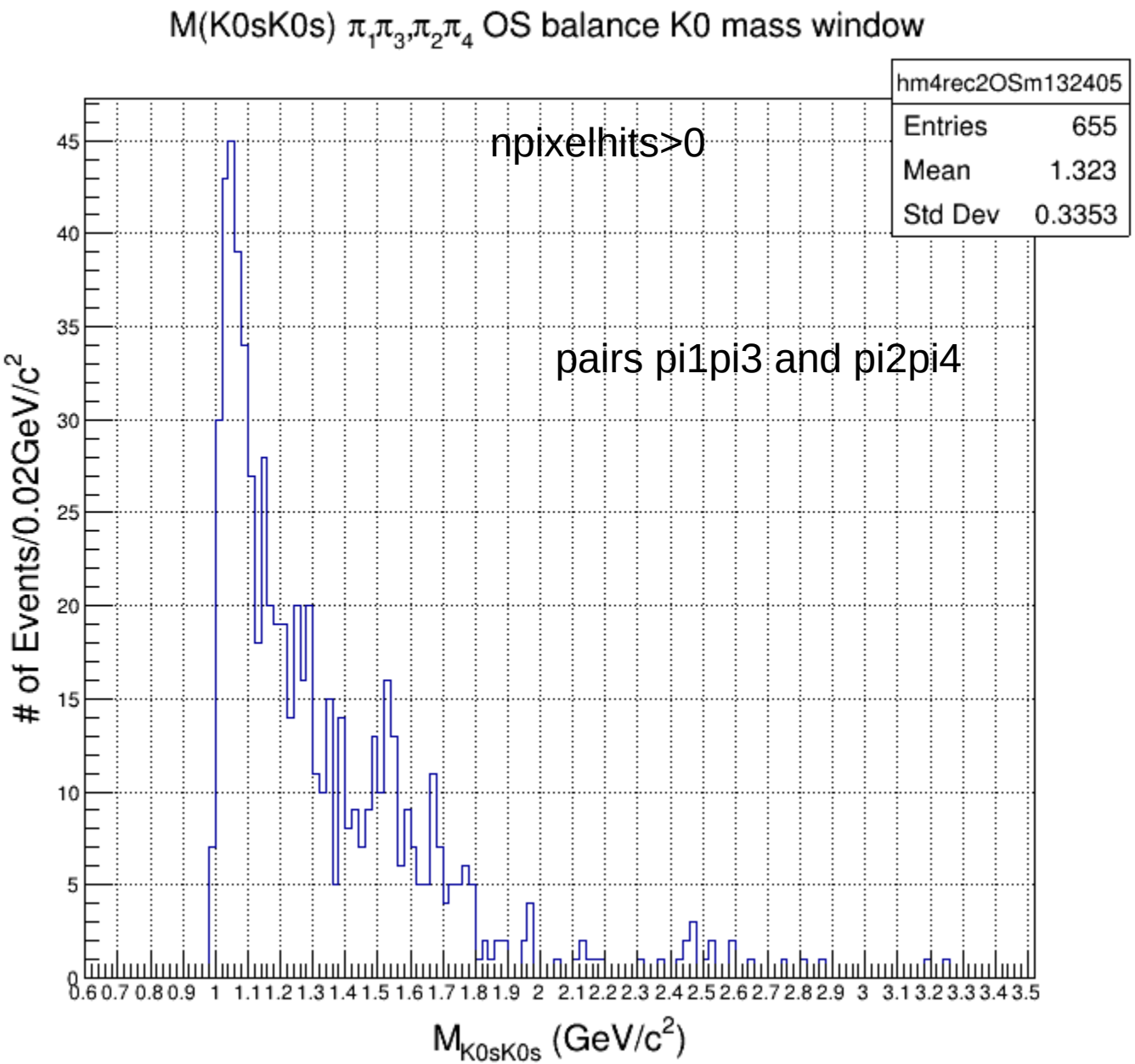
t4 = TT/BB

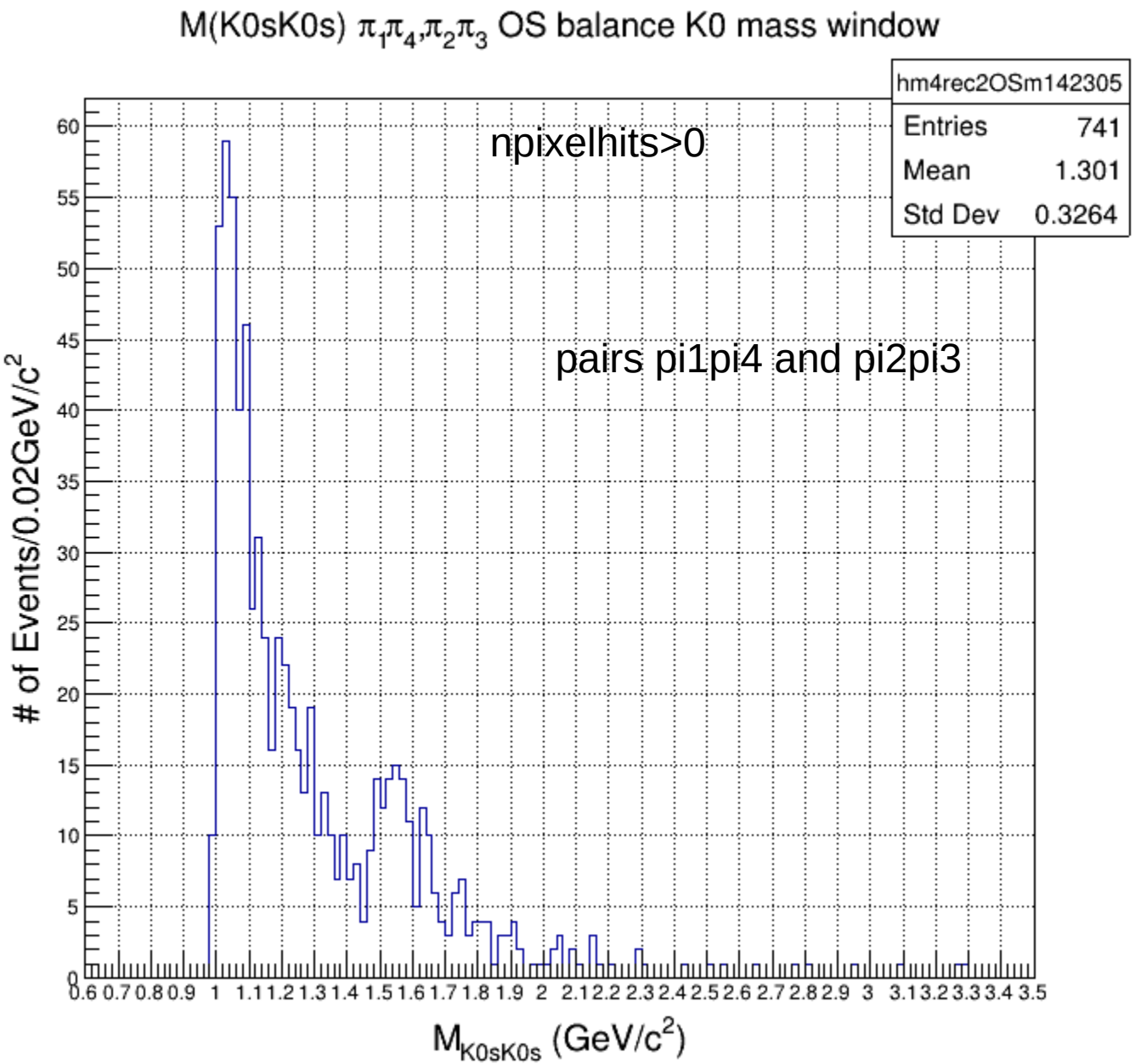
t40, t41, t42, t43

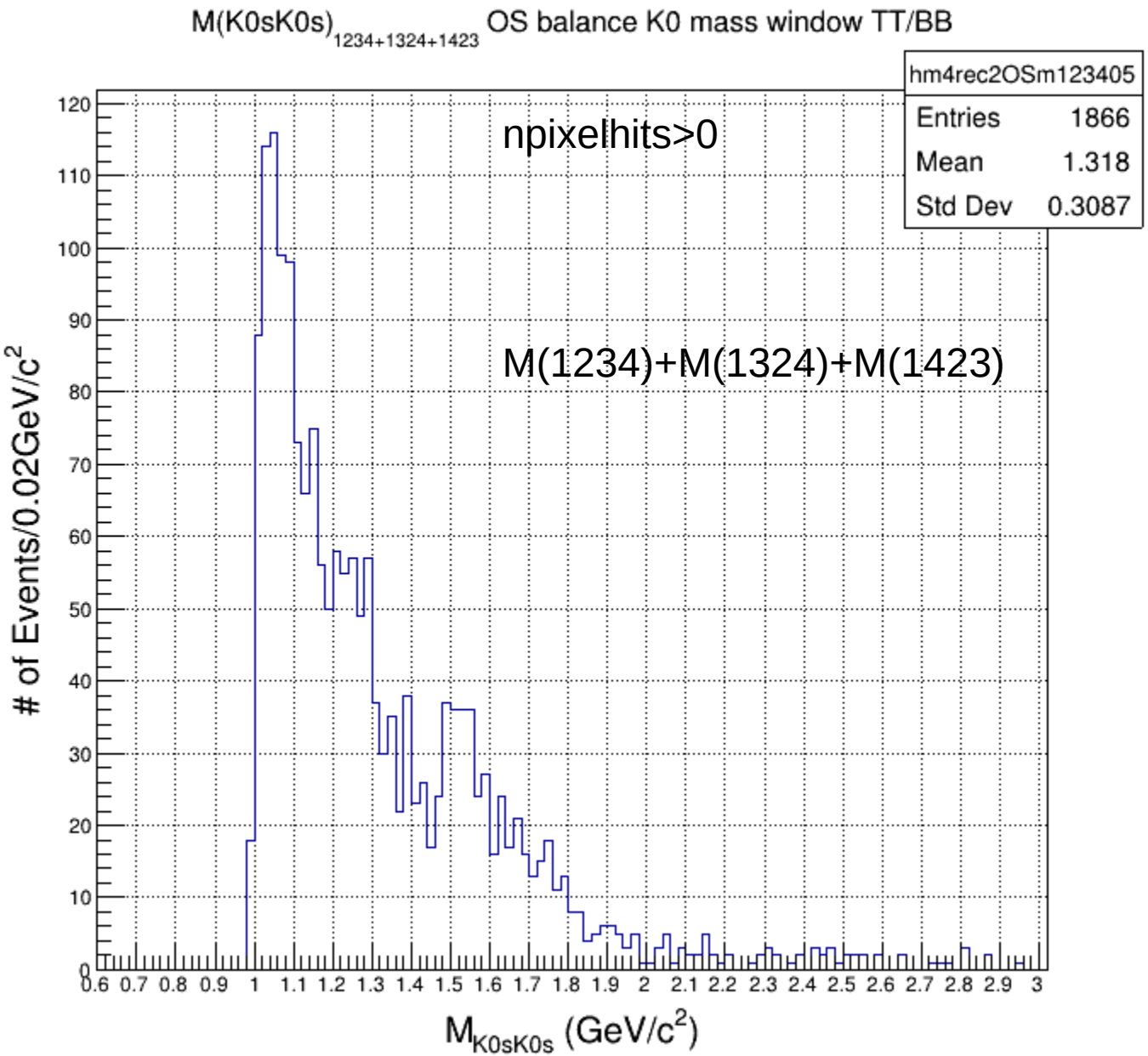
sorry, Mike, I will include the table of numbers
in the next analyses

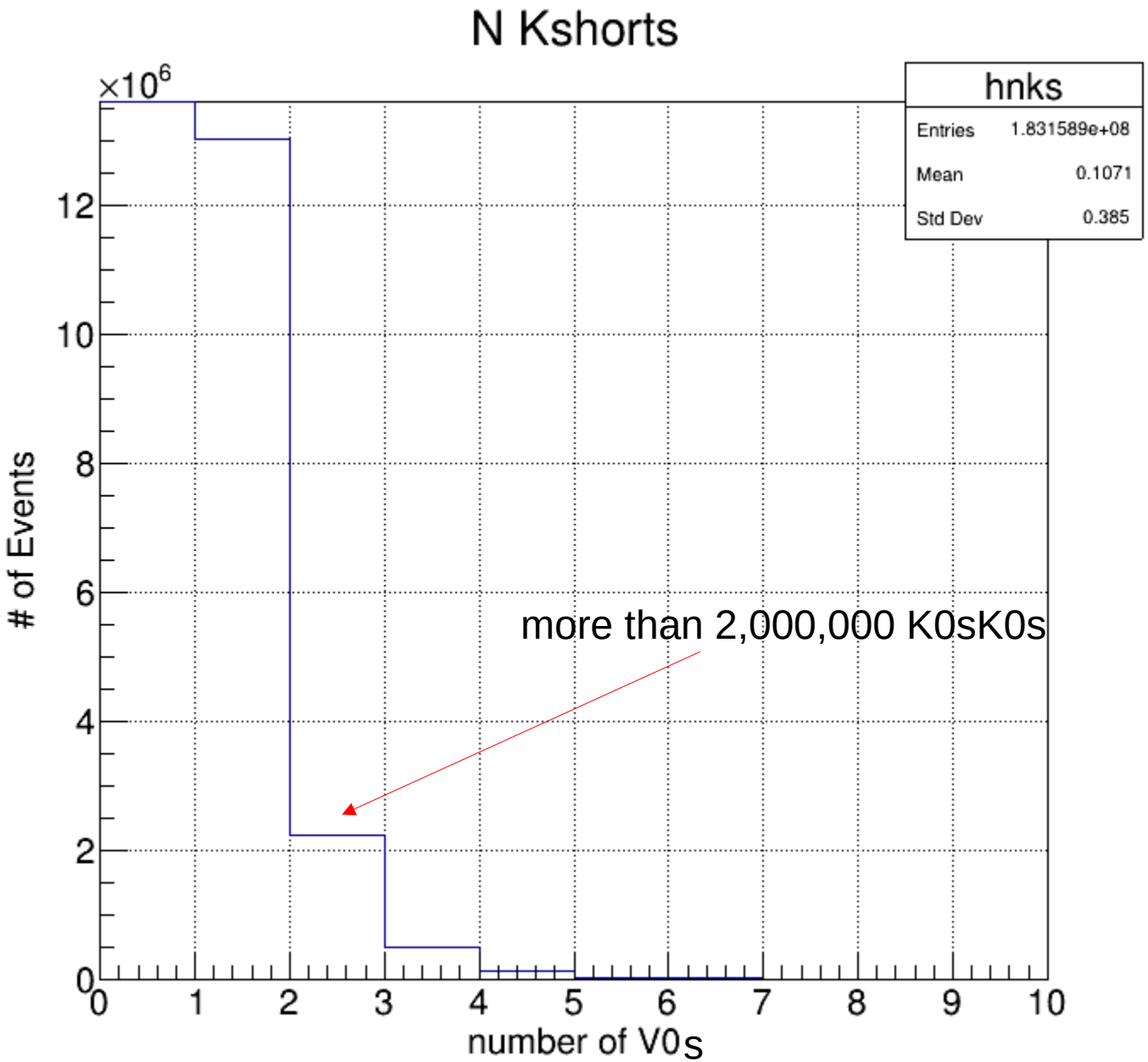

M(K0sK0s) OS balance V0 Kalman fitter tkPtCut=0.0
hm4rec2OSveeno02
Entries 601
Mean 1.664
Std Dev 0.5214
general tracks
# of Events/0.02GeV/c2
MK0sK0s (GeV/c2)

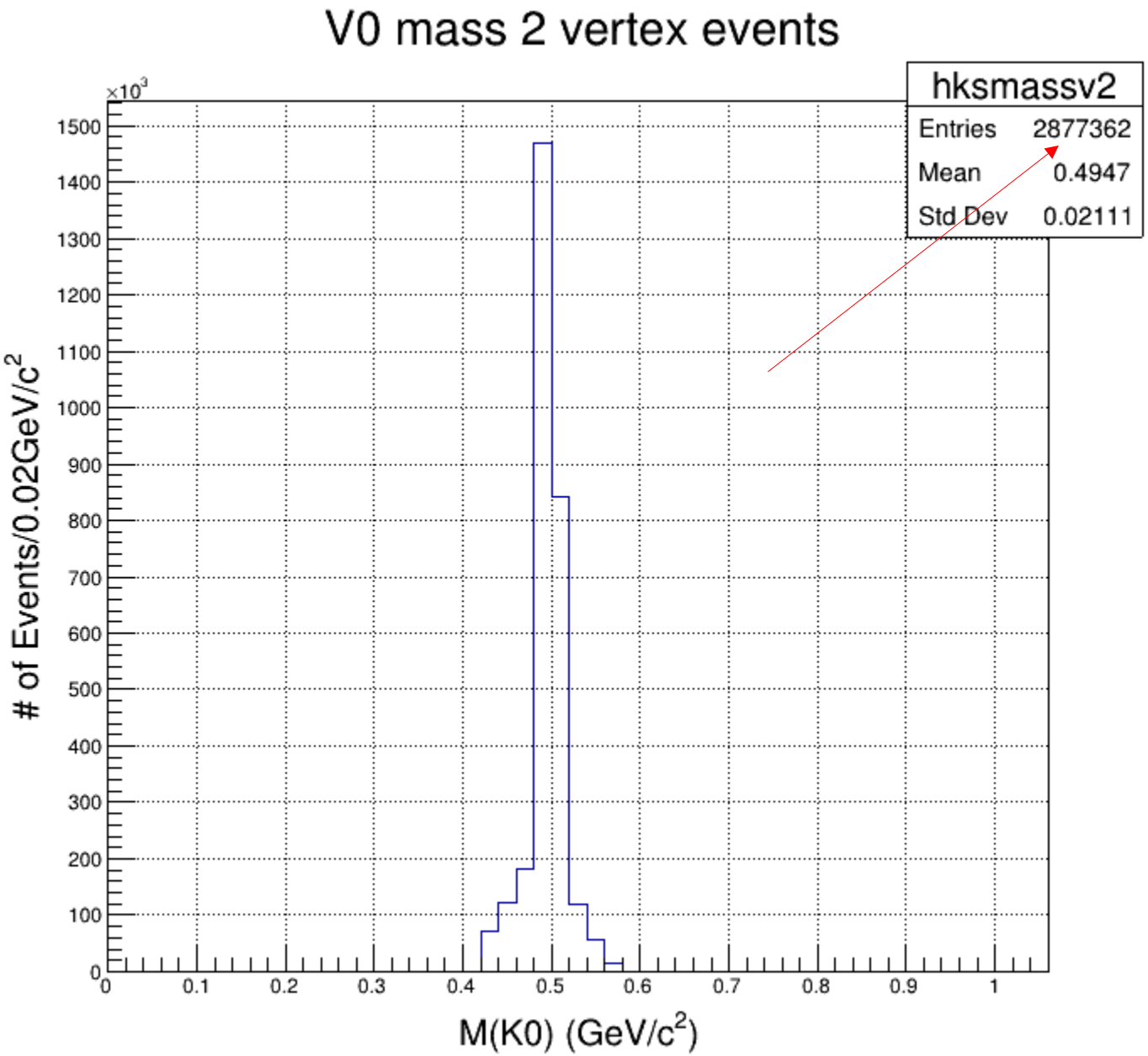

M(K0sK0s) $\pi_1\pi_2,\pi_3\pi_4$ OS balance K0 mass window
hm4rec2OSm123405
Entries 470
Mean 1.358
Std Dev 0.2984
npixelhits>0
pairs pi1pi2 and pi3pi4
# of Events/0.02GeV/c^2
M_{K0sK0s} (GeV/c^2)

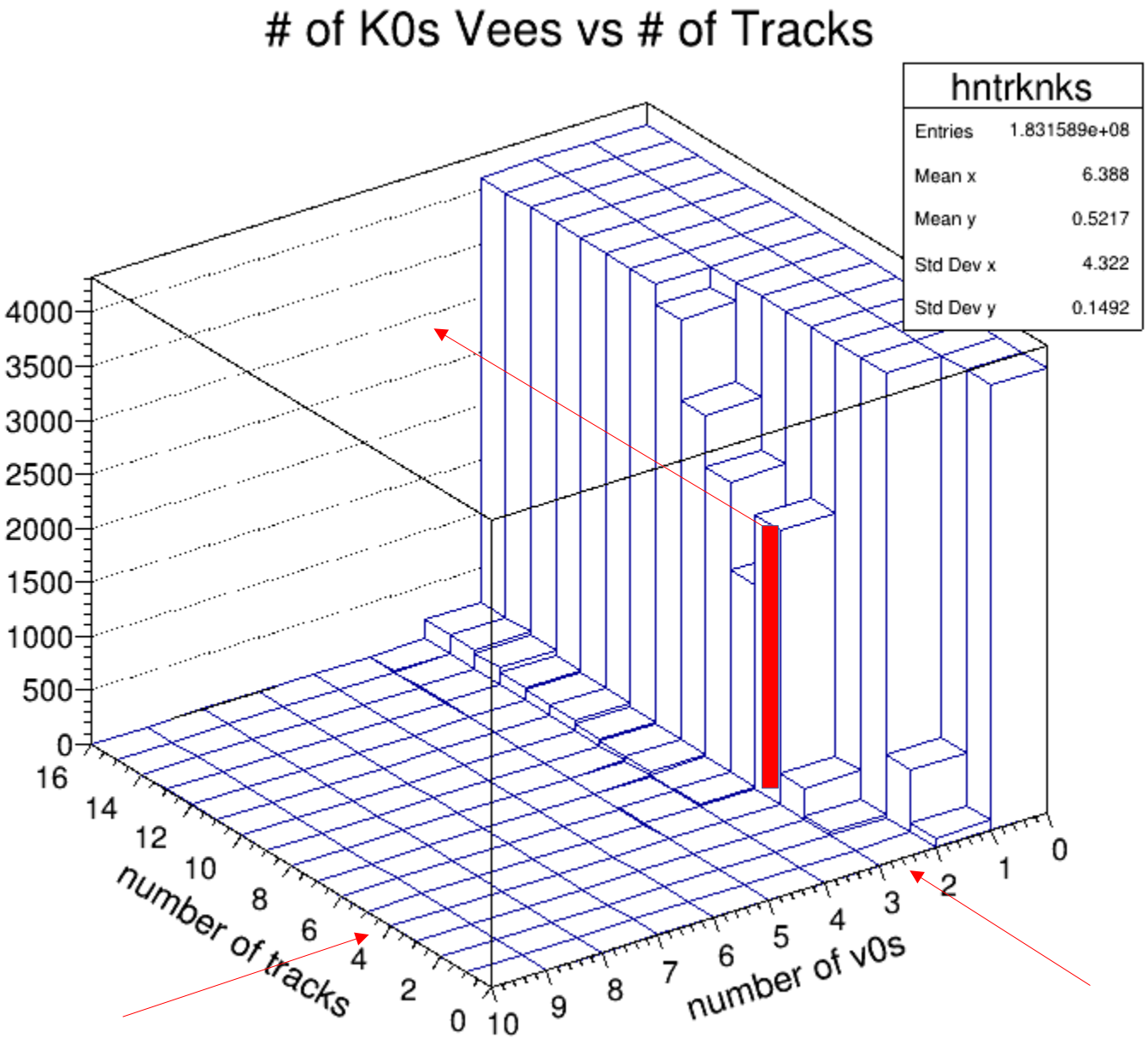

M(K0sK0s) $\pi_1\pi_3,\pi_2\pi_4$ OS balance K0 mass window
hm4rec2OSm132405
Entries 655
Mean 1.323
Std Dev 0.3353
npixelhits>0
pairs pi1pi3 and pi2pi4
# of Events/0.02GeV/c^2
M_{K0sK0s} (GeV/c^2)

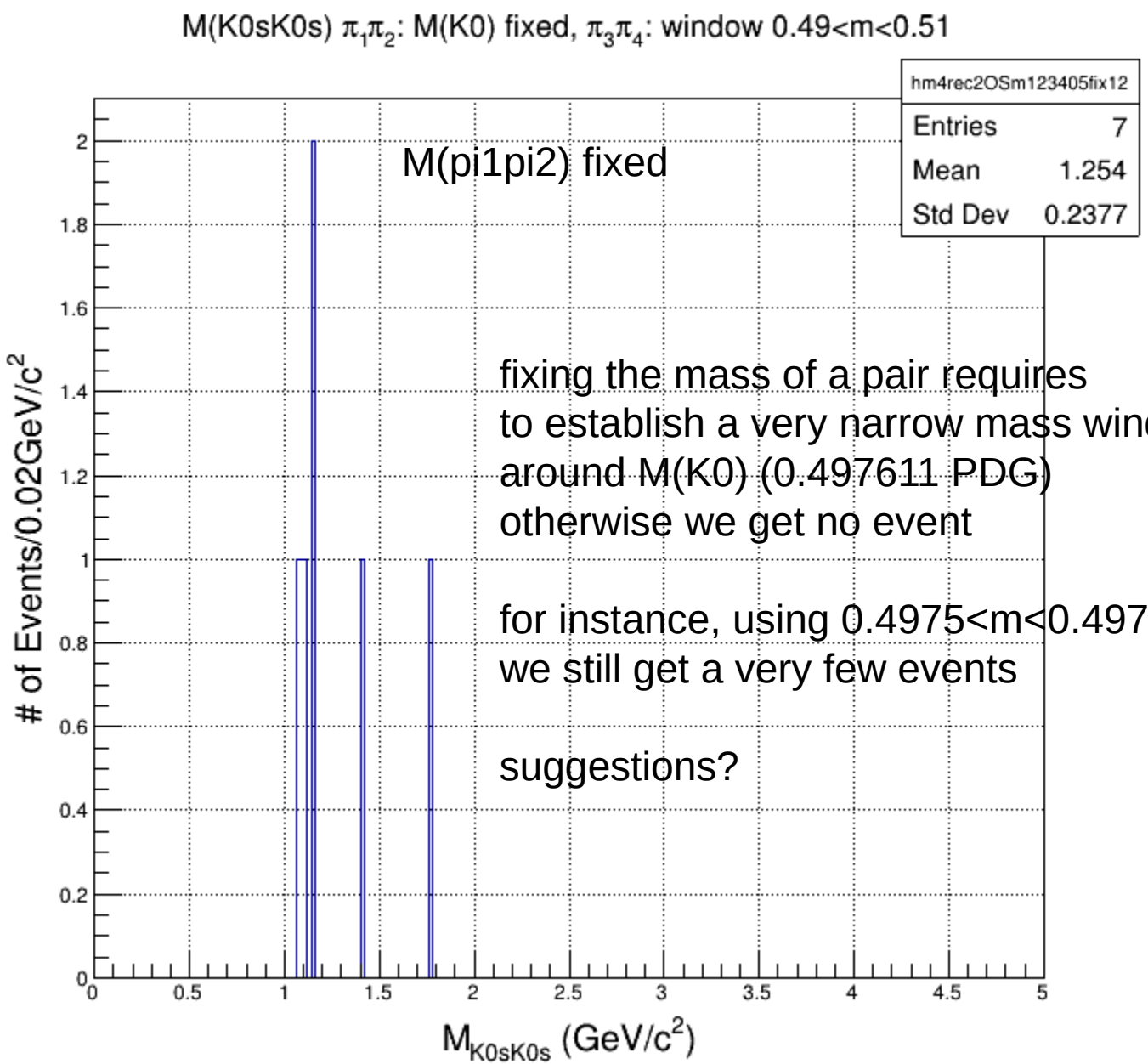

M(K0sK0s) $\pi_1\pi_4,\pi_2\pi_3$ OS balance K0 mass window
hm4rec2OSm142305
Entries 741
Mean 1.301
Std Dev 0.3264
npixelhits>0
pairs pi1pi4 and pi2pi3
# of Events/0.02GeV/c^2
M_{K0sK0s} (GeV/c^2)

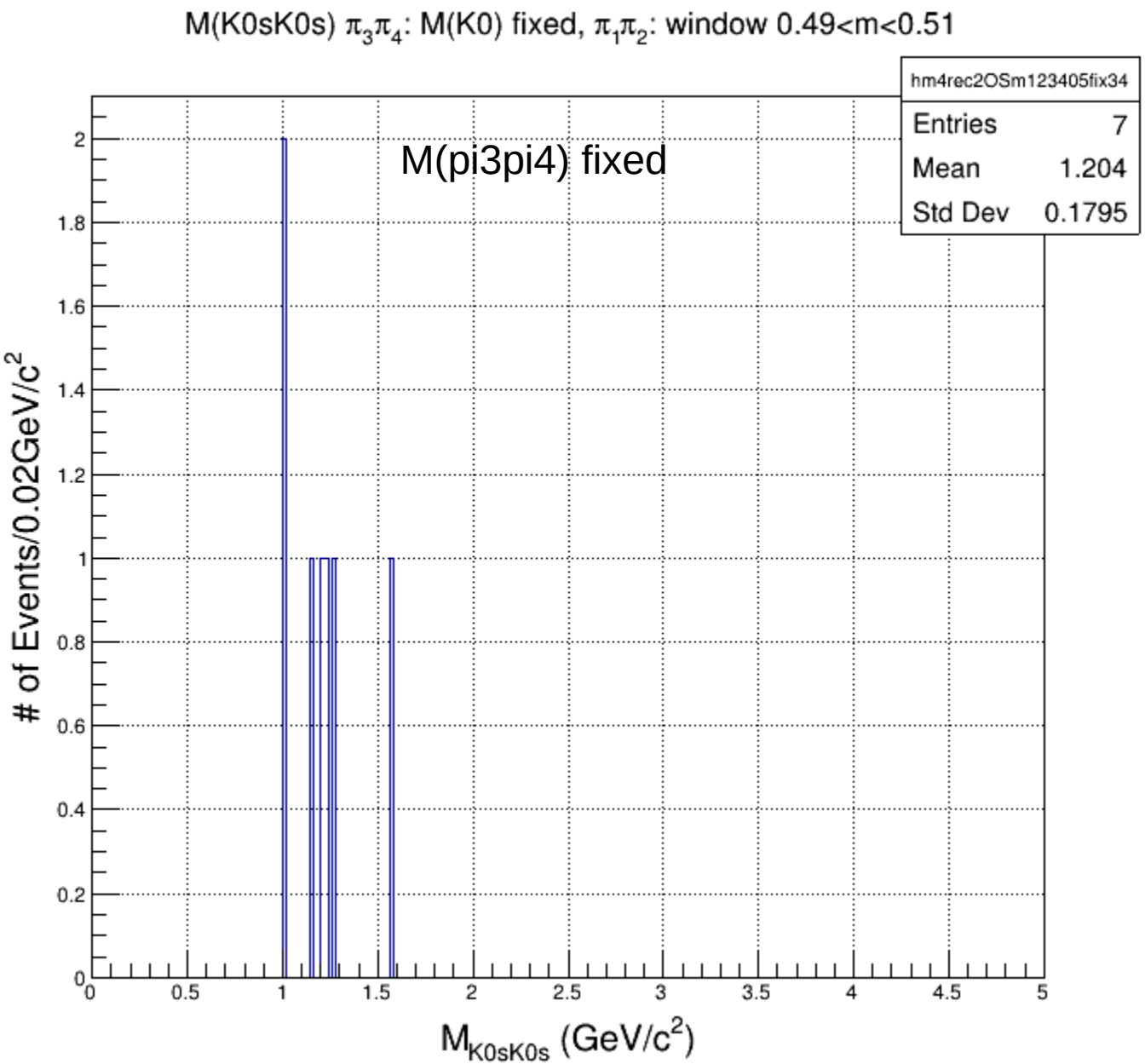

M(K0sK0s)1234+1324+1423 OS balance K0 mass window TT/BB
hm4rec2OSm123405
Entries 1866
Mean 1.318
Std Dev 0.3087
npixelhits>0
M(1234)+M(1324)+M(1423)
# of Events/0.02GeV/c2
MK0sK0s (GeV/c2)


N Kshorts
×10^6
hnks
Entries 1.831589e+08
Mean 0.1071
Std Dev 0.385
# of Events
number of V0s
more than 2,000,000 K0sK0s
0
2
4
6
8
10
12
0
1
2
3
4
5
6
7
8
9
10


V0 mass 2 vertex events
hksmassv2
Entries 2877362
Mean 0.4947
Std Dev 0.02111
×10^3
# of Events/0.02GeV/c^2
M(K0) (GeV/c^2)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1


# of K0s Vees vs # of Tracks
hntrknks
Entries 1.831589e+08
Mean x 6.388
Mean y 0.5217
Std Dev x 4.322
Std Dev y 0.1492
4000
3500
3000
2500
2000
1500
1000
500
0
16
14
12
10
8
6
4
2
0
number of tracks
10
9
8
7
6
5
4
3
2
1
0
number of v0s


M(K0sK0s) $\pi_1\pi_2$: M(K0) fixed, $\pi_3\pi_4$: window 0.49<m<0.51
hm4rec2OSm123405fix12
Entries 7
Mean 1.254
Std Dev 0.2377
M(pi1pi2) fixed
fixing the mass of a pair requires
to establish a very narrow mass window
around M(K0) (0.497611 PDG)
otherwise we get no event
for instance, using 0.4975<m<0.4977
we still get a very few events
suggestions?
# of Events/0.02GeV/c^2
M_{K0sK0s} (GeV/c^2)


M(K0sK0s) $\pi_3\pi_4$: M(K0) fixed, $\pi_1\pi_2$: window 0.49<m<0.51
M(pi3pi4) fixed
hm4rec2OSm123405fix34
Entries 7
Mean 1.204
Std Dev 0.1795
# of Events/0.02GeV/c^2
M_{K0sK0s} (GeV/c^2)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
0.5
1.5
2.5
3
3.5
4
4.5
5