T38 report

2011.5.1

Kyoto Univ.
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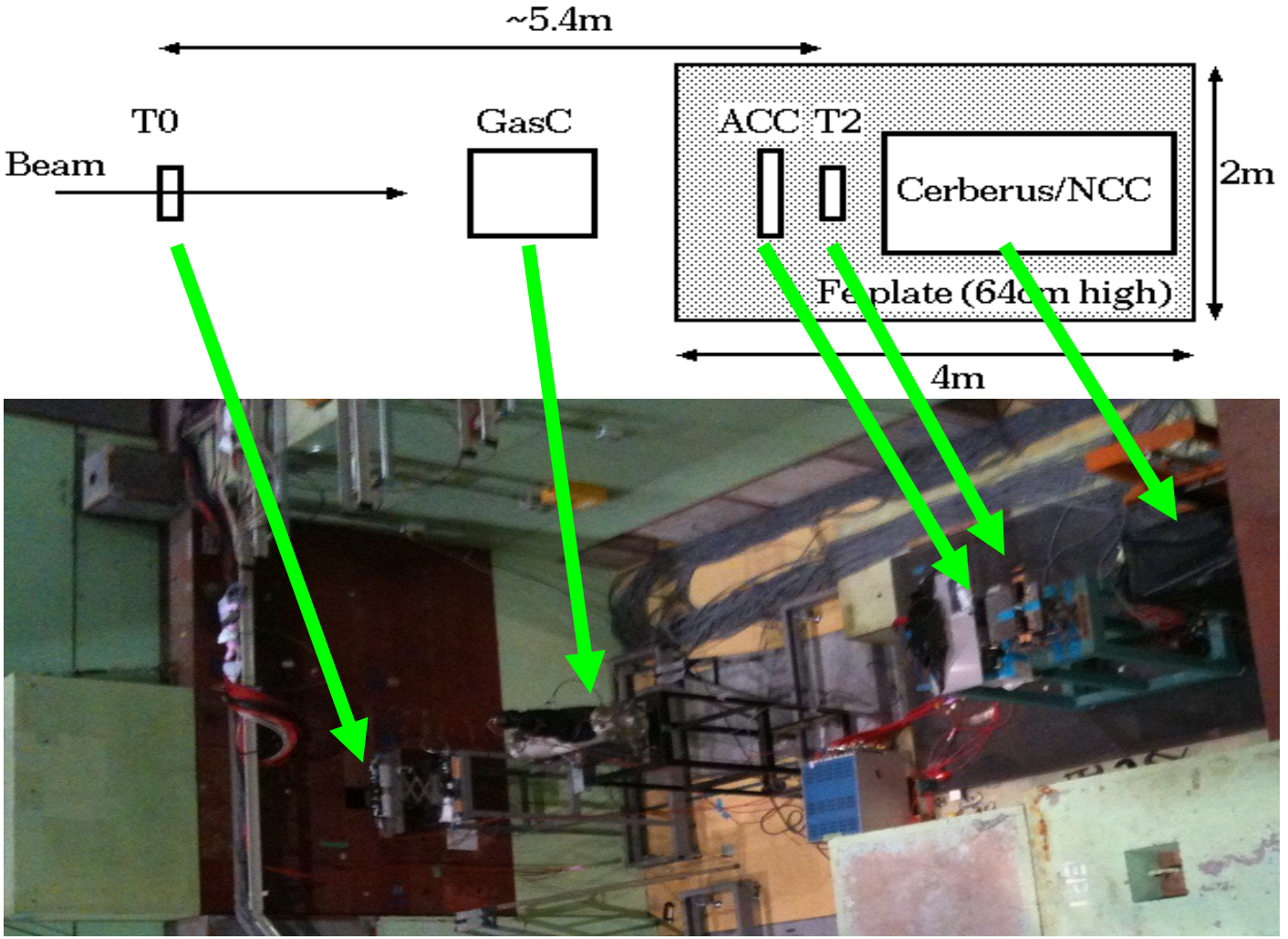
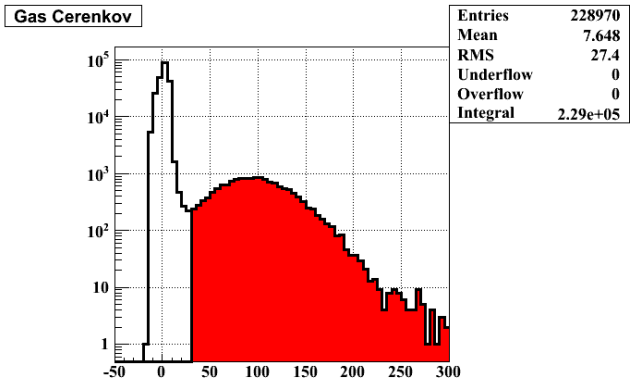
Setup at K1.1BR

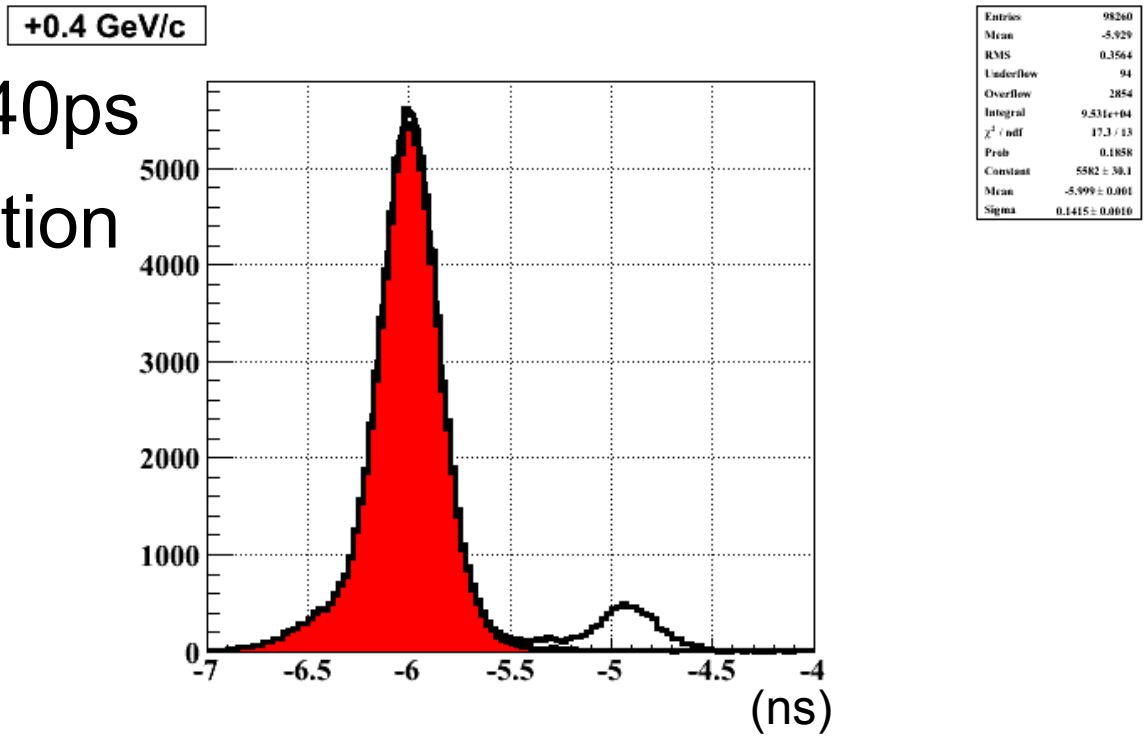
- TOF: T0,T2 : both readout
- Electron tag: Gas Cerenkov(dry air 3atm,HV2.2kV)



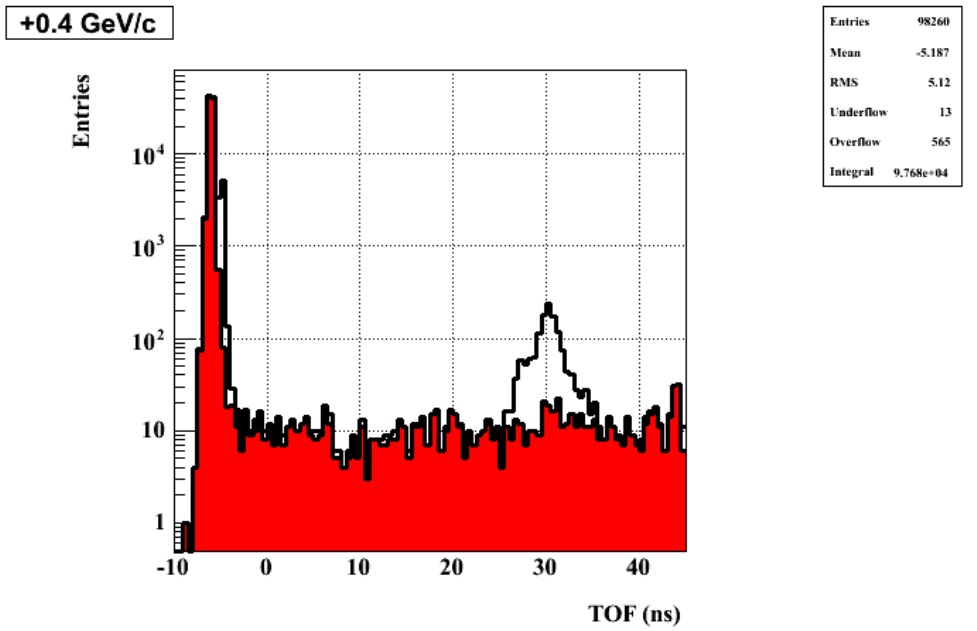
Timing resolution and electron tag efficiency

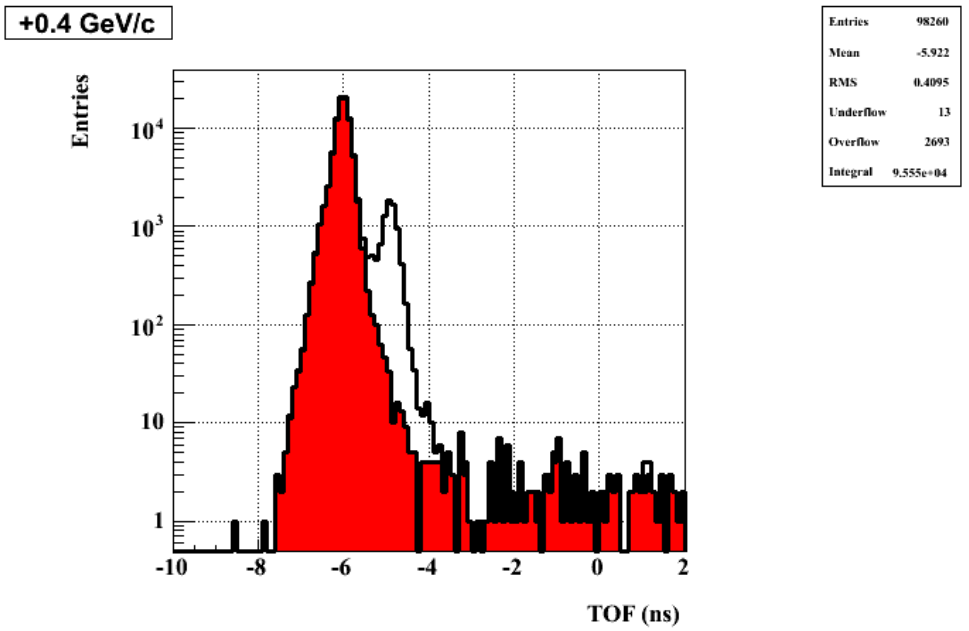


- Mean time of both readouts
- With T-Q correction
- +0.4 GeV/c electron and pion TOF peak
  - ~1.1ns difference
  - Electron width : ~140ps
  - Red: with GC selection
    - 97.4% efficiency

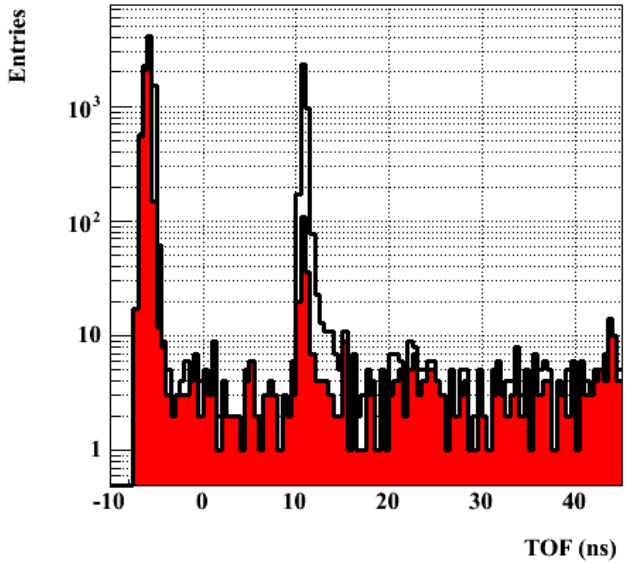


TOF


+0.4 GeV/c
Entries
TOF (ns)
Entries 98260
Mean -5.187
RMS 5.12
Underflow 13
Overflow 565
Integral 9.768e+04

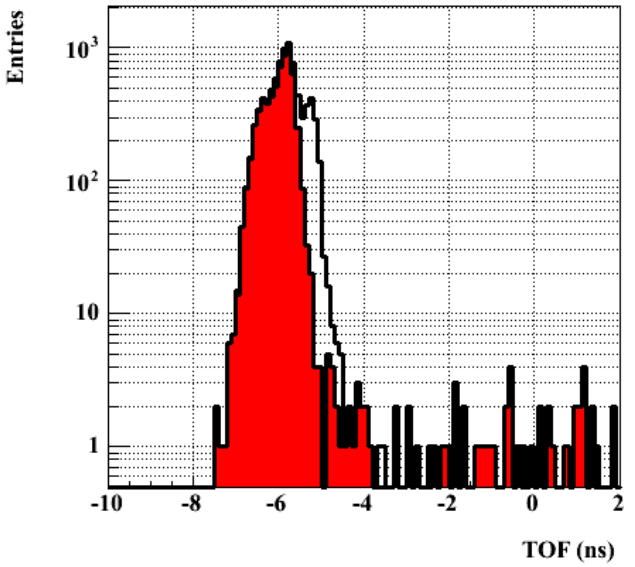

+0.4 GeV/c
Entries
TOF (ns)
Entries 98260
Mean -5.922
RMS 0.4095
Underflow 13
Overflow 2693
Integral 9.555e+04

+0.6 GeV/c



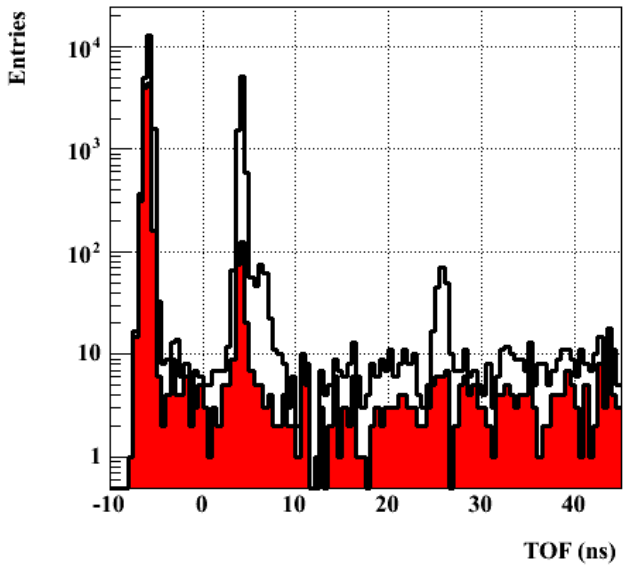
Entries	12797
Mean	-0.1062
RMS	9.015
Underflow	1
Overflow	315
Integral	1.248e+04

+0.6 GeV/c



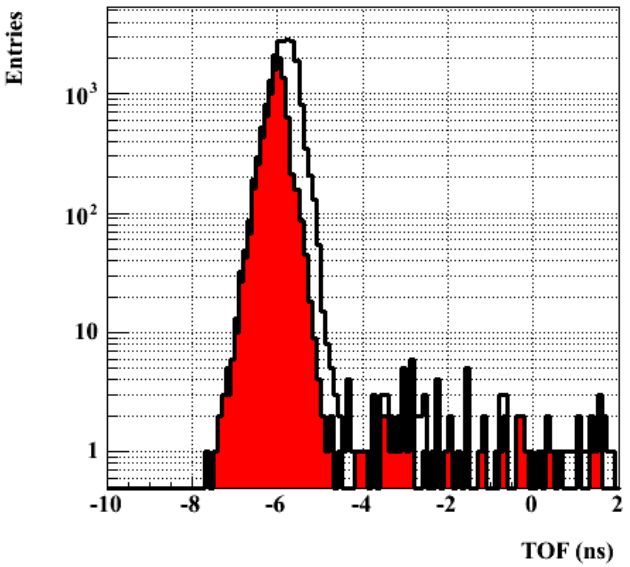
Entries	12797
Mean	-5.824
RMS	0.5867
Underflow	1
Overflow	4256
Integral	8540

+0.8 GeV/c



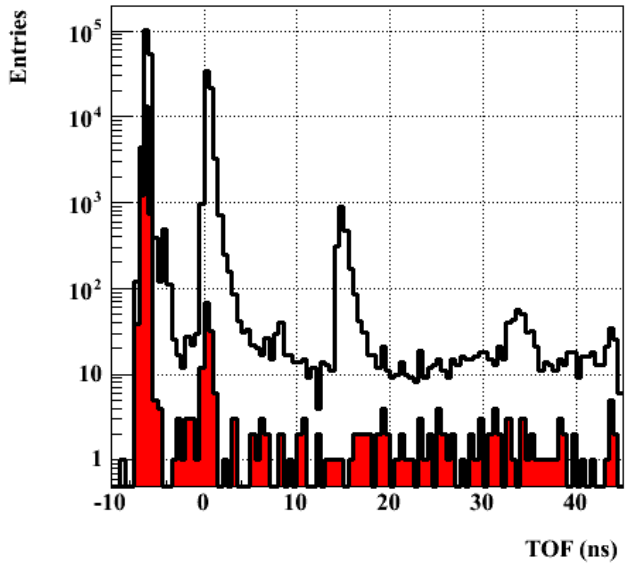
Entries	28757
Mean	-2.298
RMS	6.732
Underflow	5
Overflow	401
Integral	2.835e+04

+0.8 GeV/c



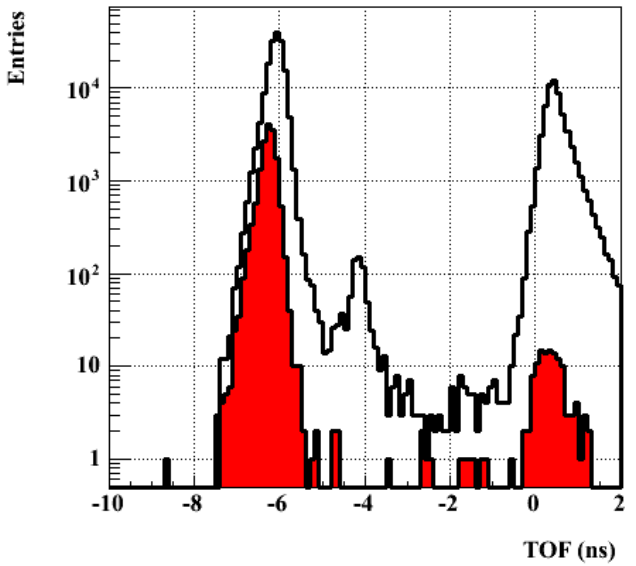
Entries	28757
Mean	-5.828
RMS	0.4277
Underflow	5
Overflow	8685
Integral	2.007e+04

+1.0 GeV/c



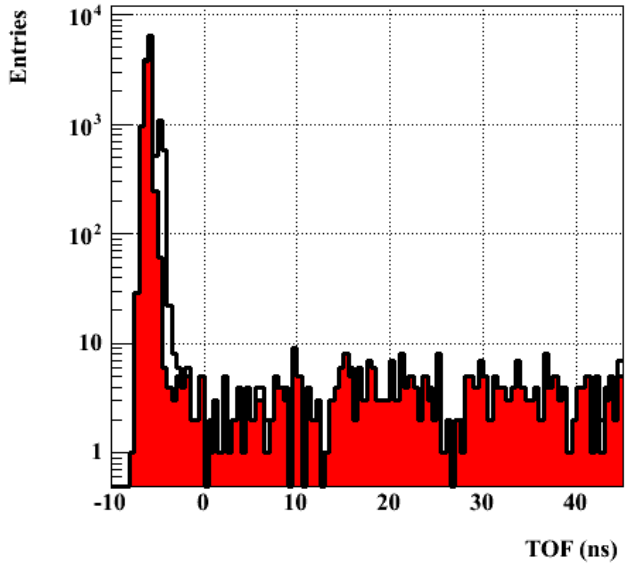
Entries	229000
Mean	-3.934
RMS	4.234
Underflow	6
Overflow	670
Integral	2.283e+05

+1.0 GeV/c



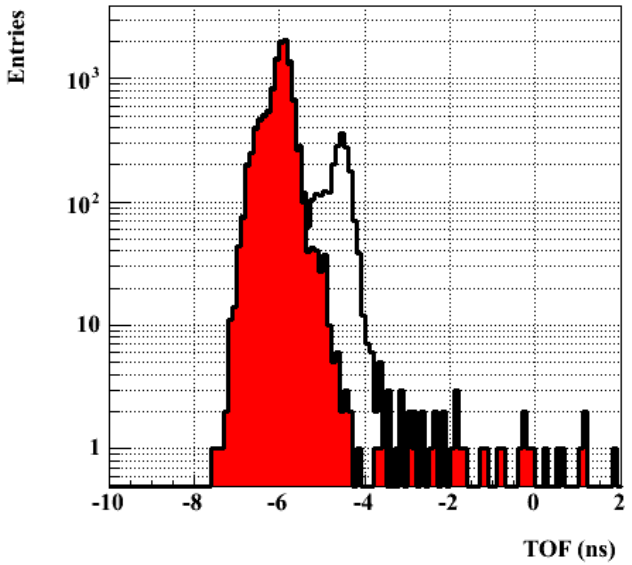
Entries	229000
Mean	-4.297
RMS	2.931
Underflow	6
Overflow	4557
Integral	2.244e+05

-0.4 GeV/c

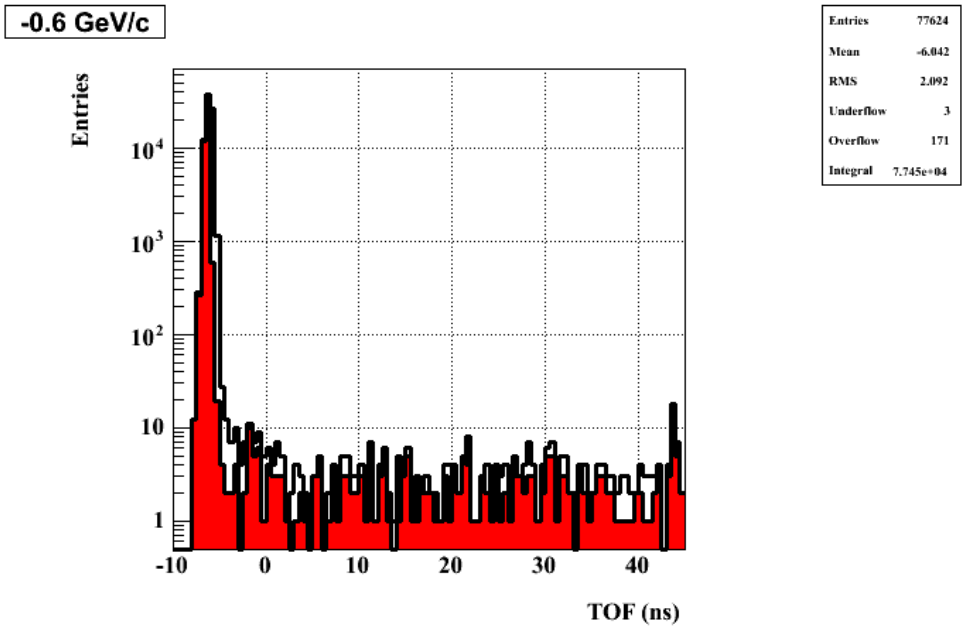


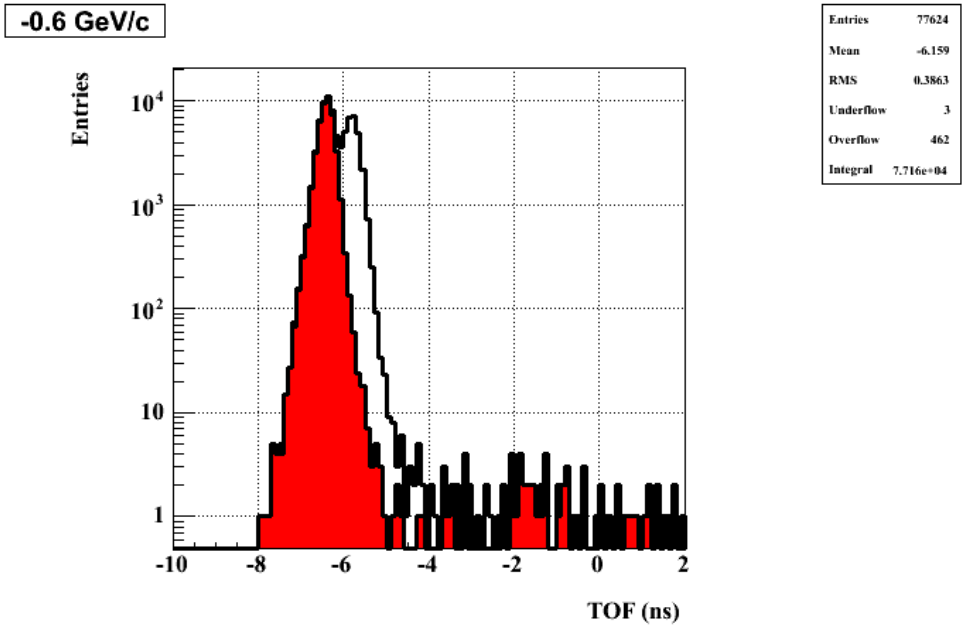
Entries	13996
Mean	-5.088
RMS	4.956
Underflow	4
Overflow	207
Integral	1.378e+04

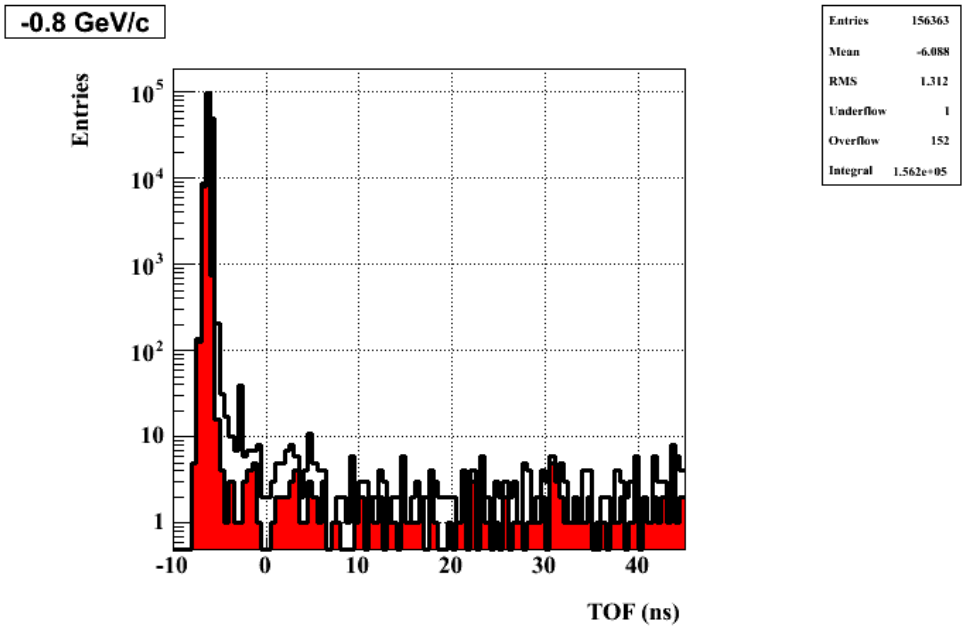
-0.4 GeV/c

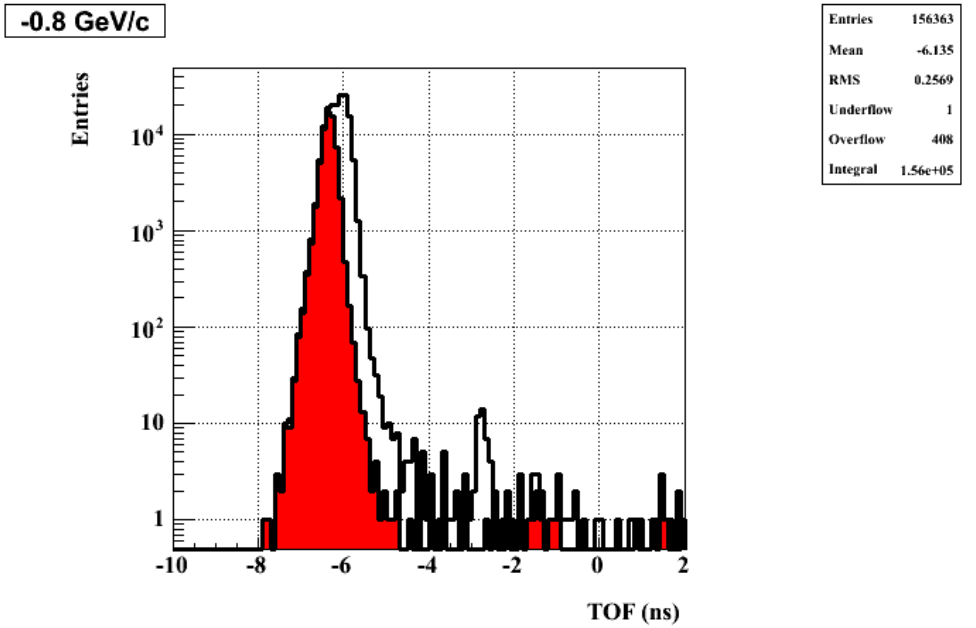


Entries	13996
Mean	-5.799
RMS	0.6189
Underflow	4
Overflow	534
Integral	1.346e+04

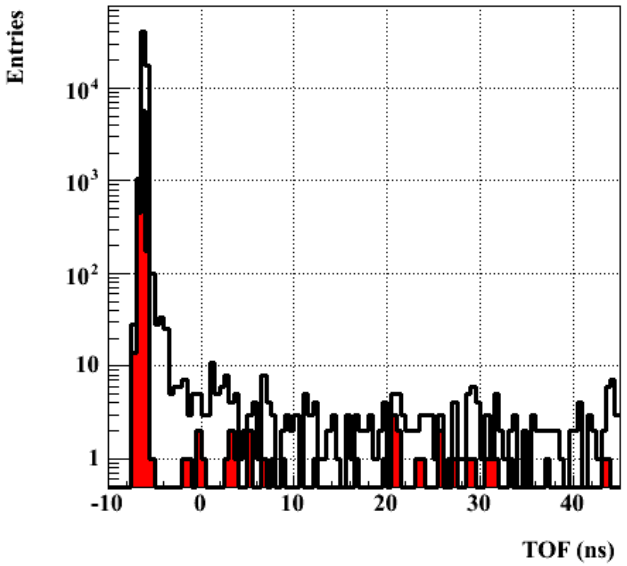

-0.6 GeV/c
Entries
10^4
10^3
10^2
10
1
-10
0
10
20
30
40
TOF (ns)
Entries 77624
Mean -6.042
RMS 2.092
Underflow 3
Overflow 171
Integral 7.745e+04


-0.6 GeV/c
Entries
10^4
10^3
10^2
10
1
-10
-8
-6
-4
-2
0
2
TOF (ns)
Entries 77624
Mean -6.159
RMS 0.3863
Underflow 3
Overflow 462
Integral 7.716e+04


-0.8 GeV/c
Entries
TOF (ns)
Entries 156363
Mean -6.088
RMS 1.312
Underflow 1
Overflow 152
Integral 1.562e+05

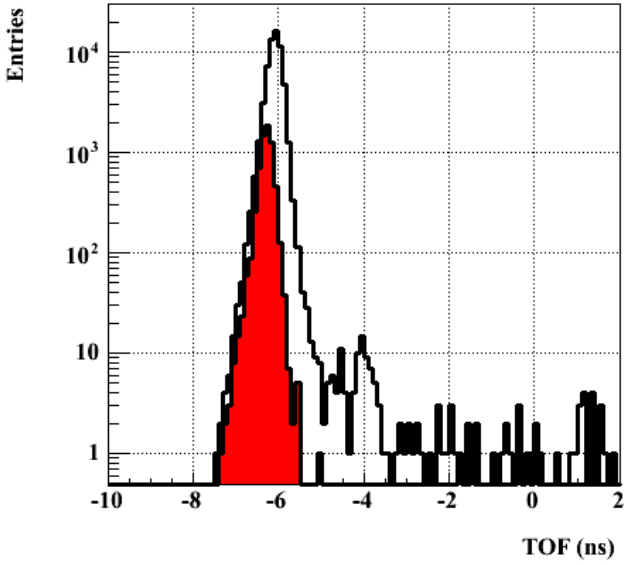

-0.8 GeV/c
Entries
TOF (ns)
Entries 156363
Mean -6.135
RMS 0.2569
Underflow 1
Overflow 408
Integral 1.56e+05

-1.0 GeV/c



Entries	60301
Mean	-5.974
RMS	1.9
Underflow	2
Overflow	136
Integral	6.016e+04

-1.0 GeV/c



Entries	60301
Mean	-6.078
RMS	0.2542
Underflow	2
Overflow	358
Integral	5.994e+04

Particle yield ratio

- Collimator condition is different for each run
- Ratio of particle yield
  - Negative momentum : proton is not identified.

p(GeV/c)	electron	pion	proton
0.4	1	0.12	*0.02*
0.6	1	0.36	*0.58*
0.8	1	1.28	*0.87*
1	1	9.6	*3.97*
-0.4	1	0.2	*0*
-0.6	1	0.74	*0*
-0.8	1	1.49	*0*
-1	1	8.37	*0*