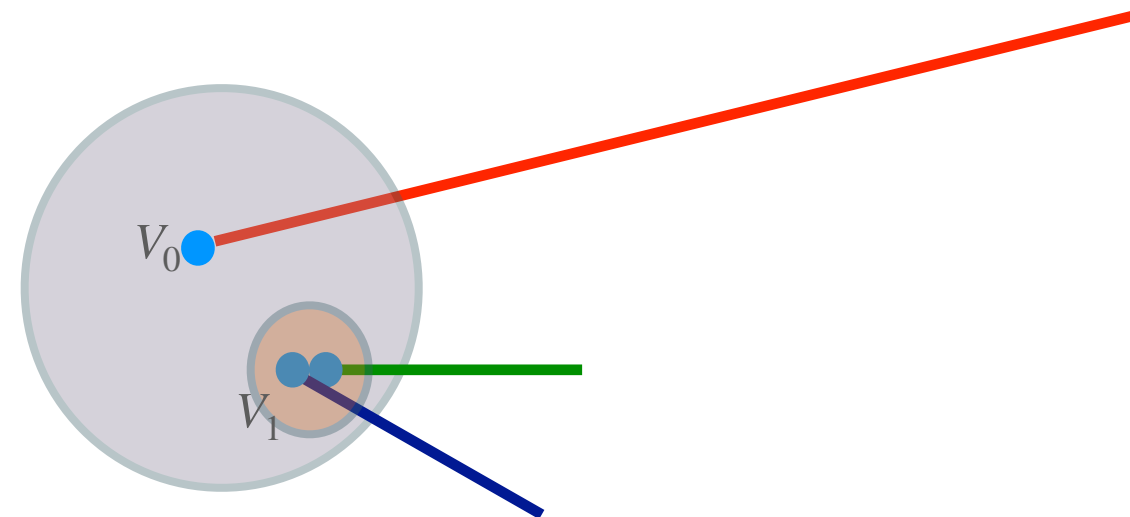
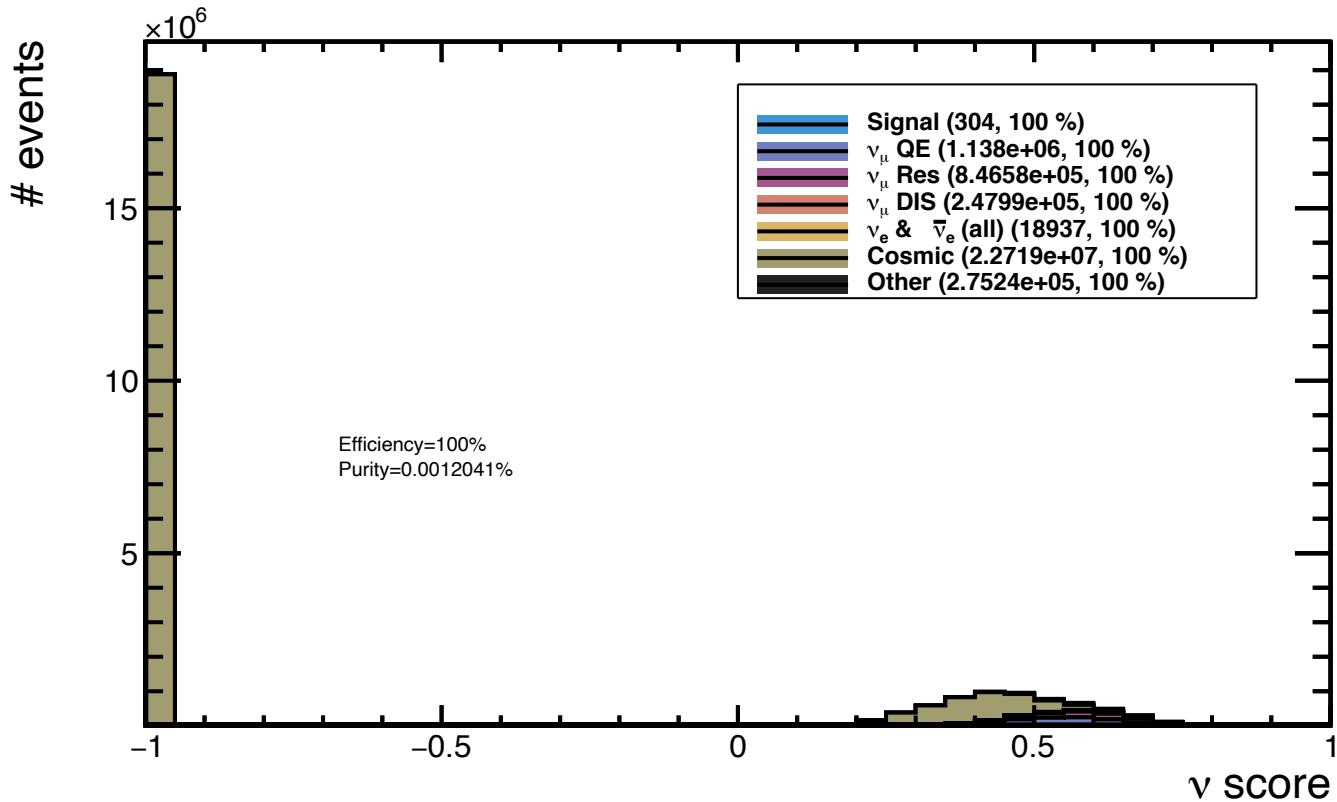
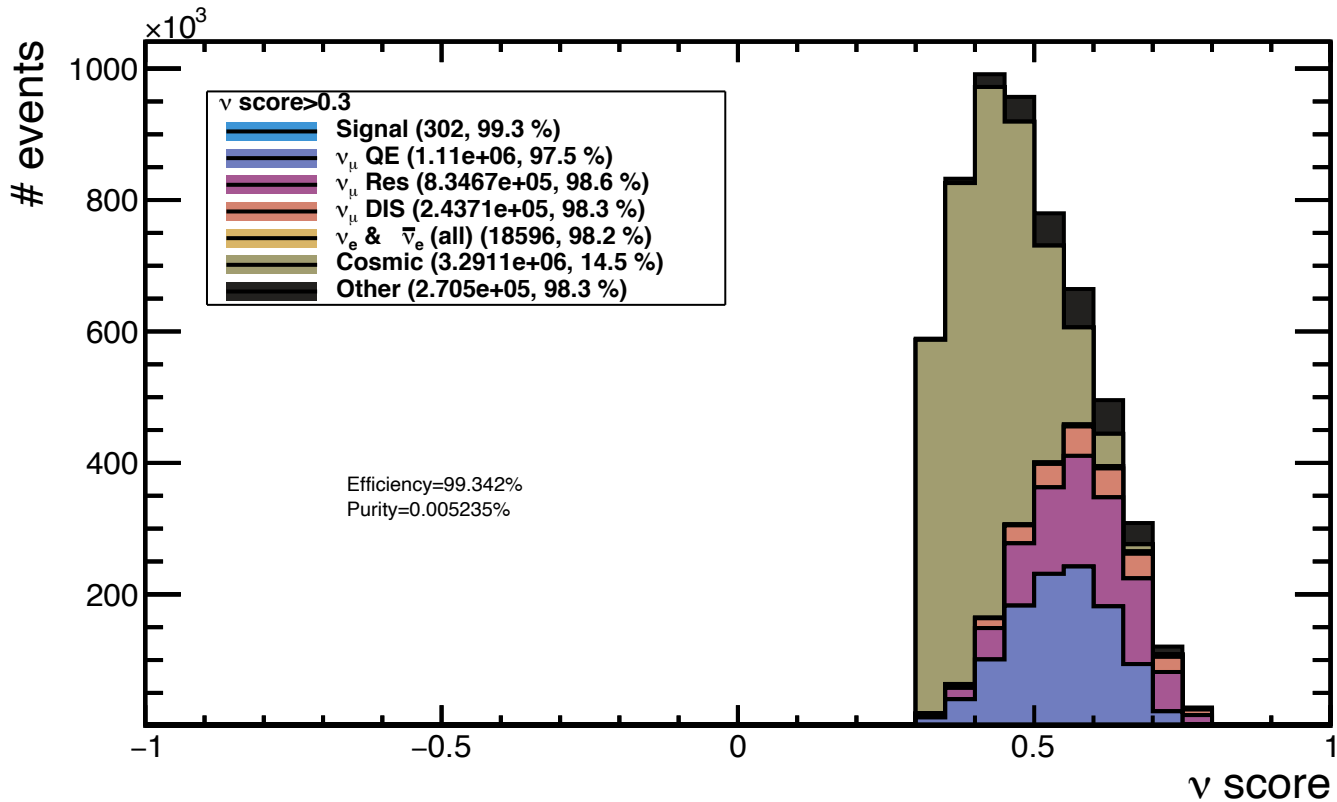


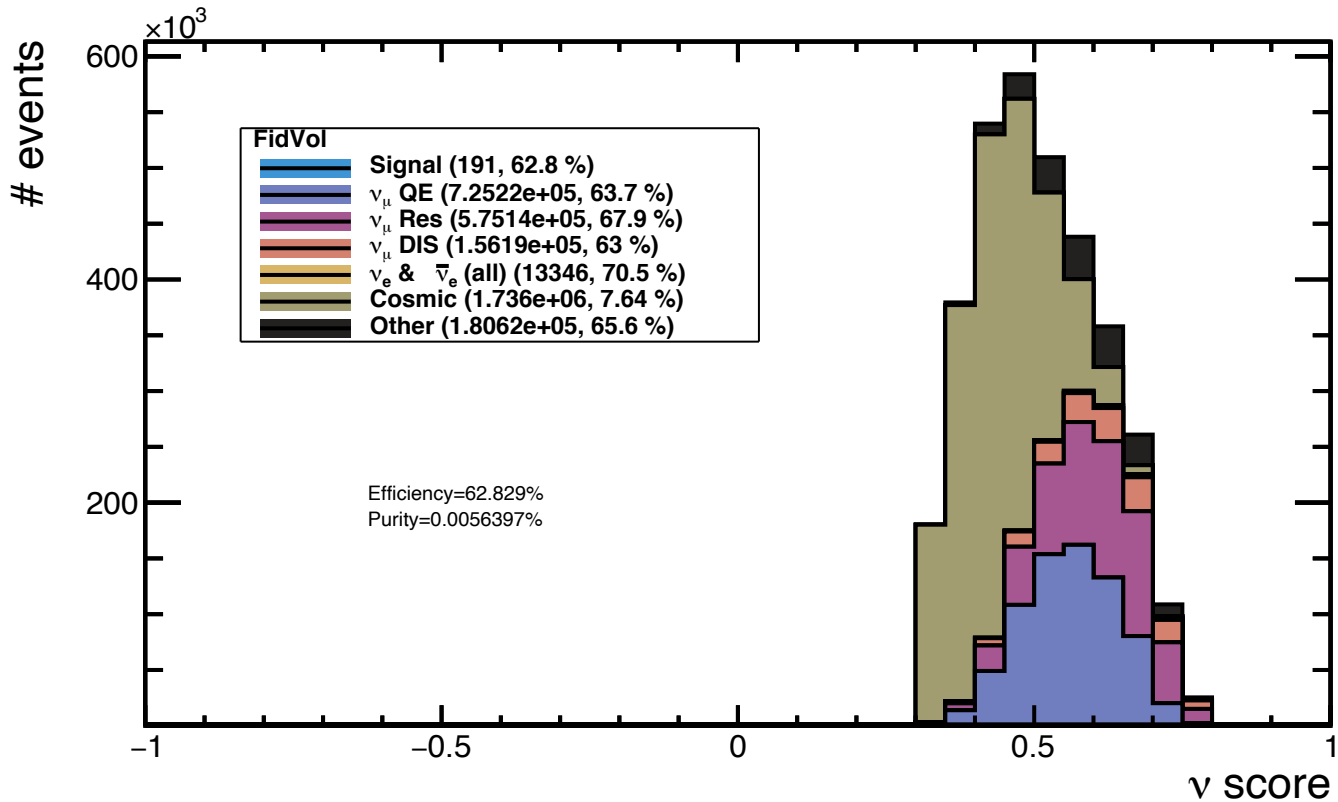
- First CAF based analysis
- Sample from the last MC production (June22)
  - Includes cosmic overlay
  - All interaction modes
- Sample equivalent to  $2.41+20$  POT ( $\sim 1$  year)

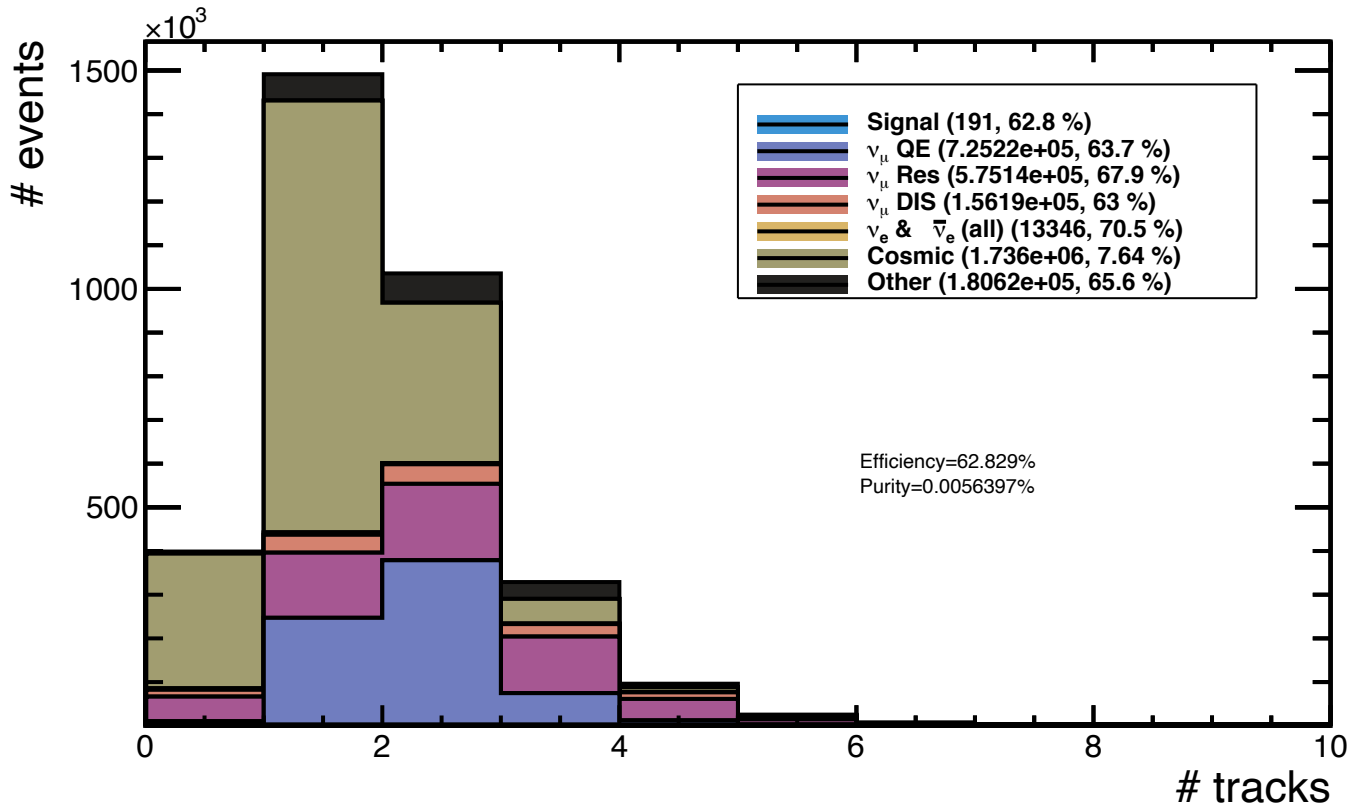
- PANDORA  $\nu$  vs cosmic score
- Fiducial volume  $|X| < 190$ ,  $|Y| < 190$ ,  $10 < Z < 490$
- At least 3 reconstructed tracks
- Longest track length greater than 30 cm (\*)
- PID:
  - Around ( $R < 20$  cm) the longest track vertex: 1 low ionizing track, 1 high ionizing track
- Reconstructed gap  $> 1.5$  cm
- Invariant mass

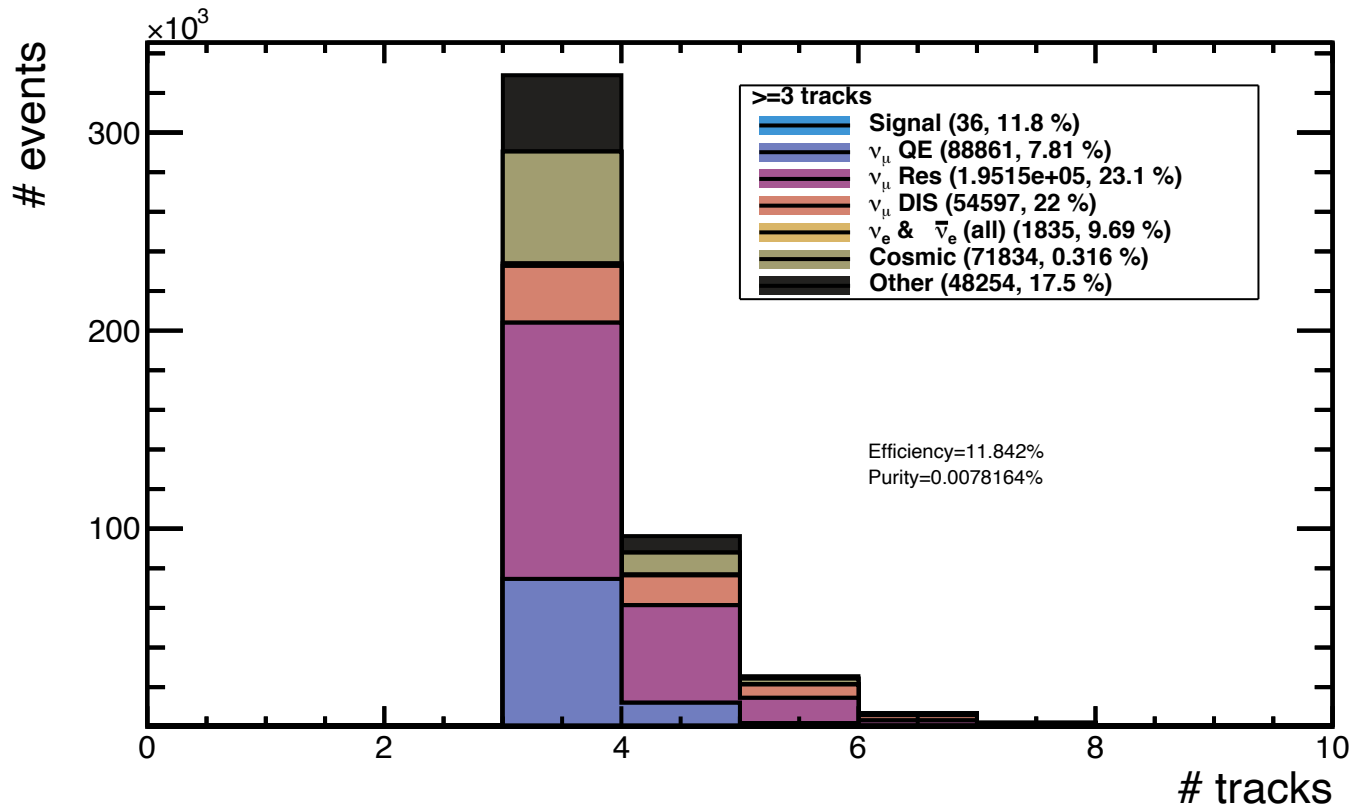


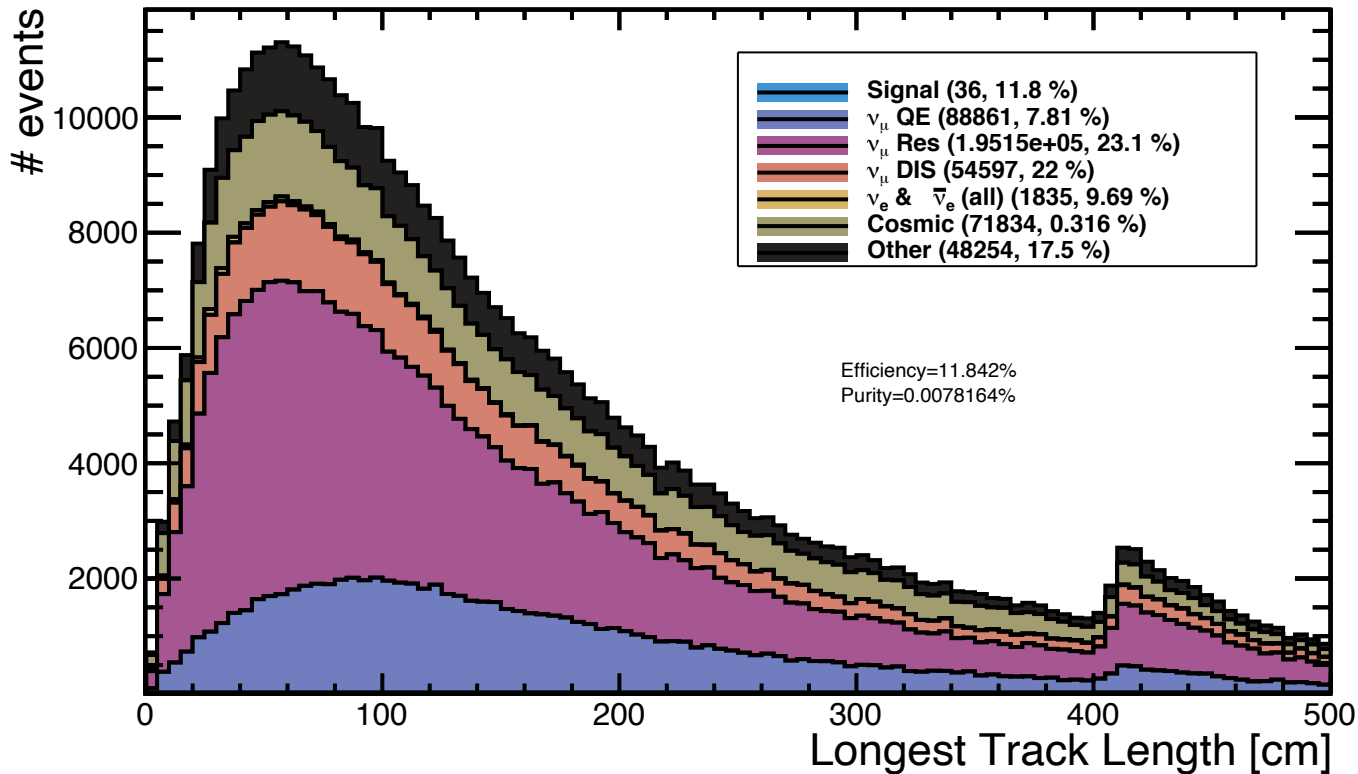


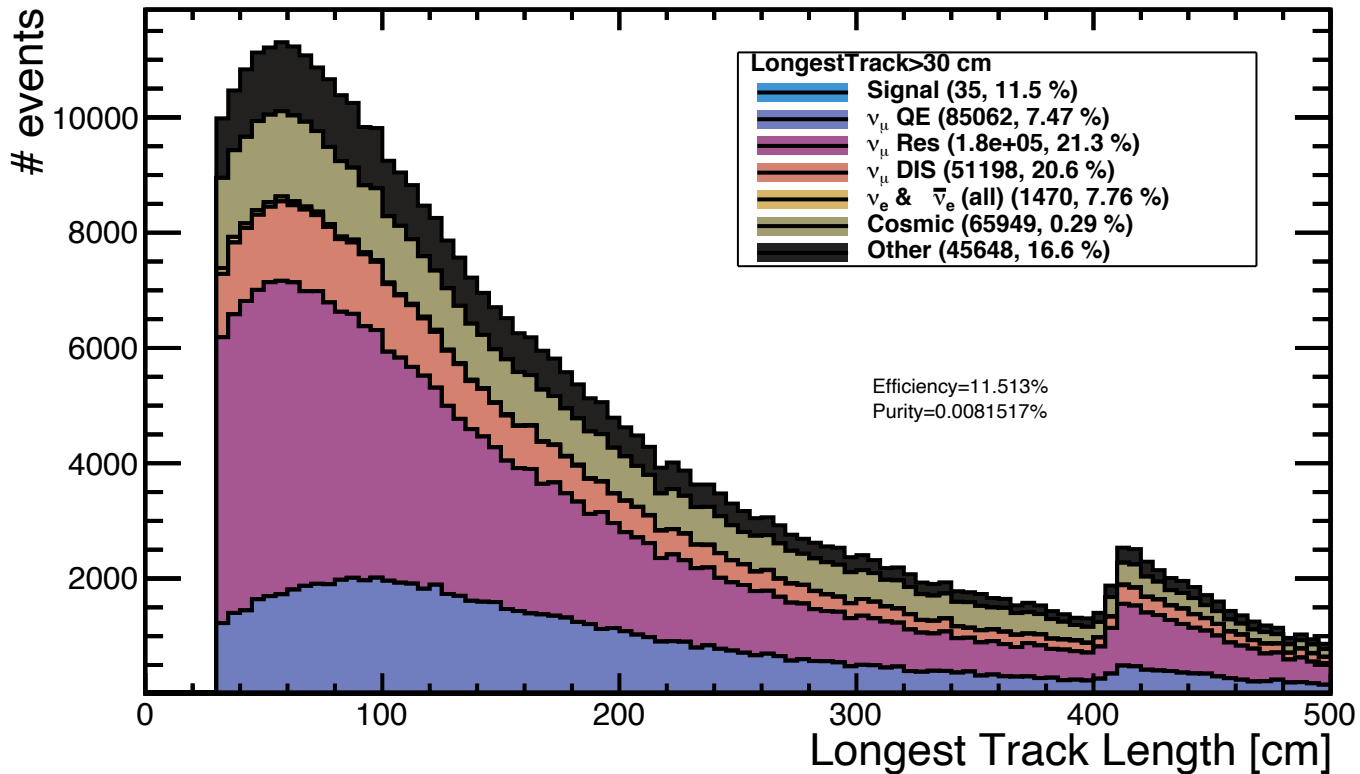




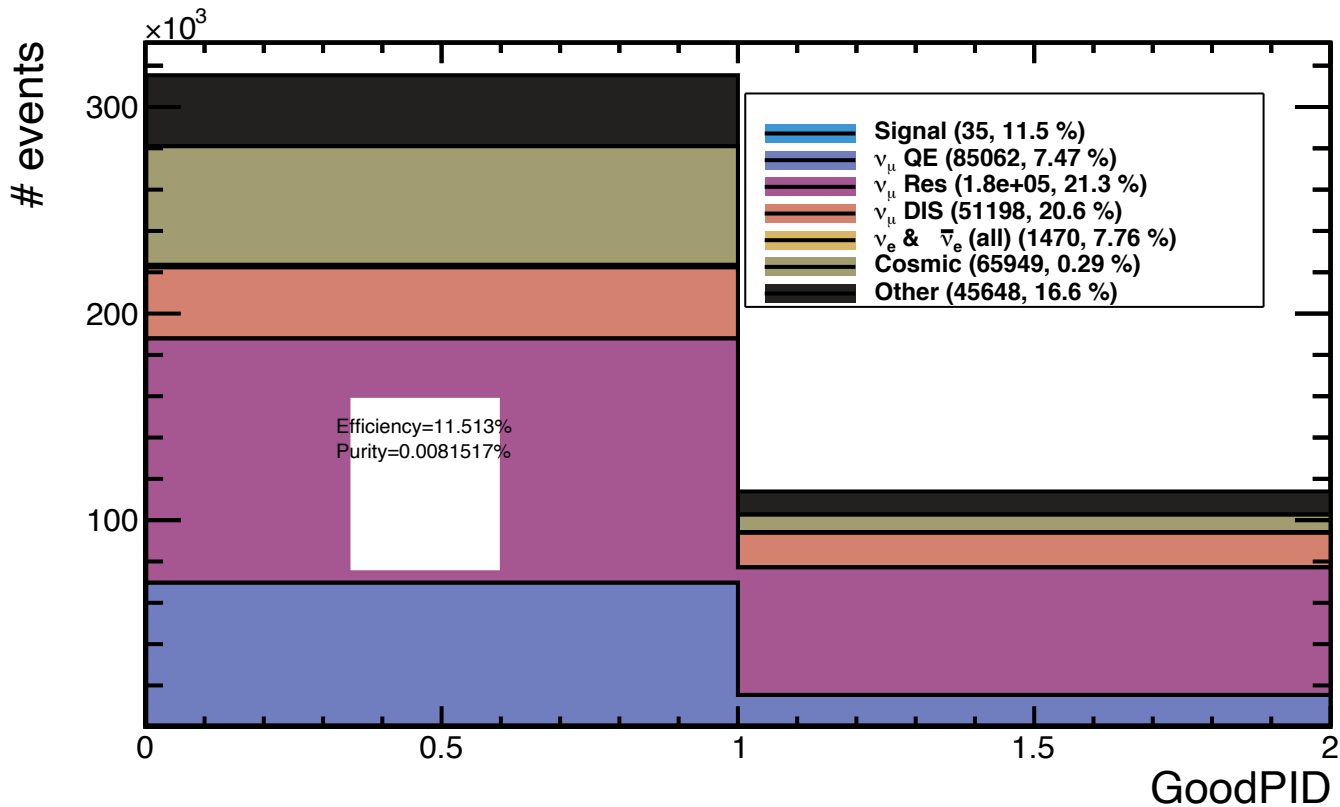


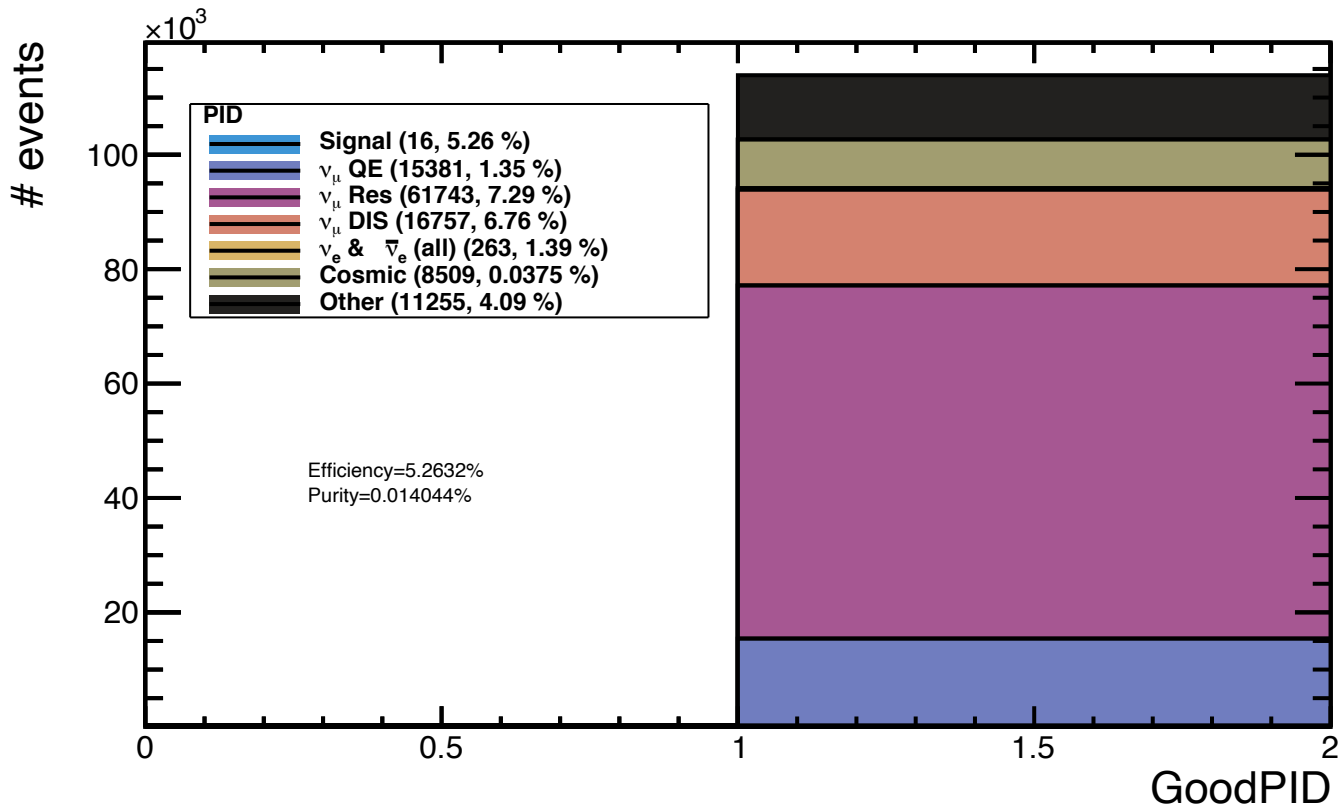


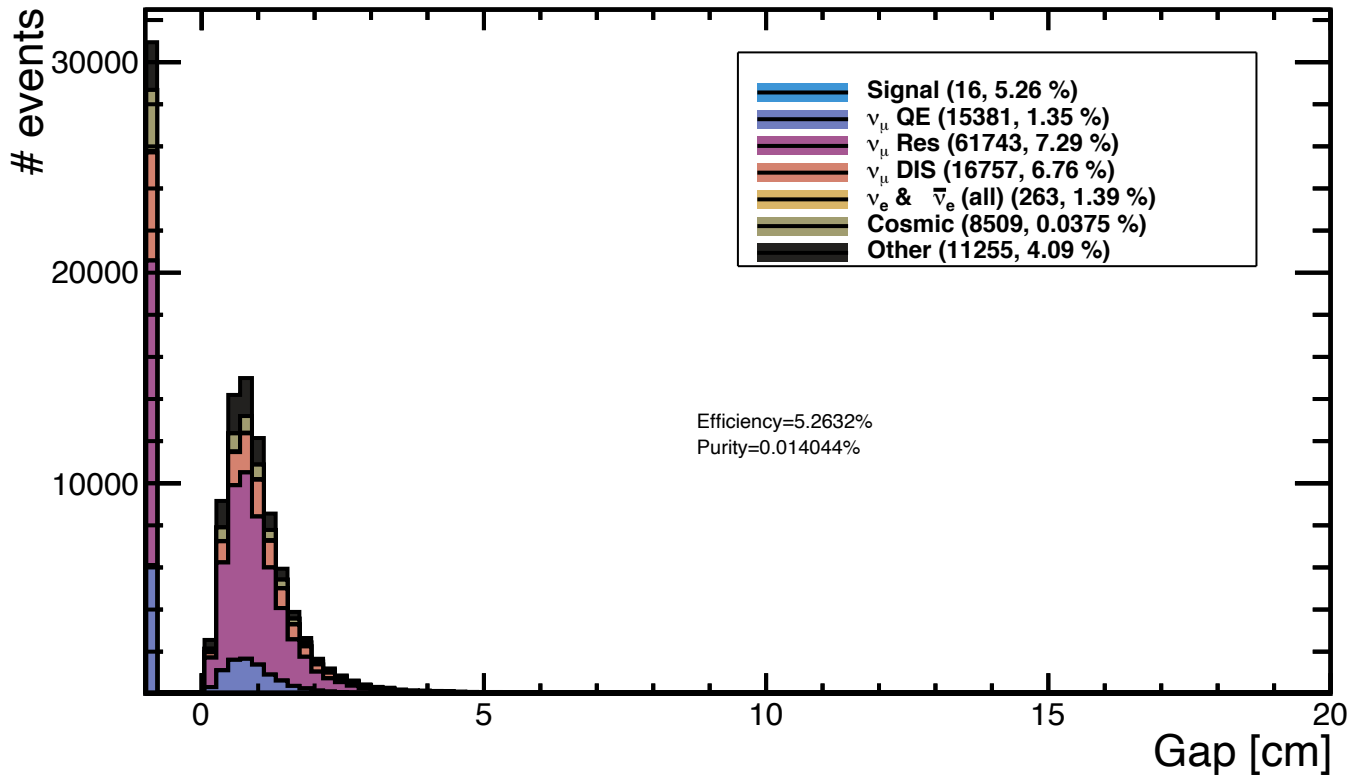


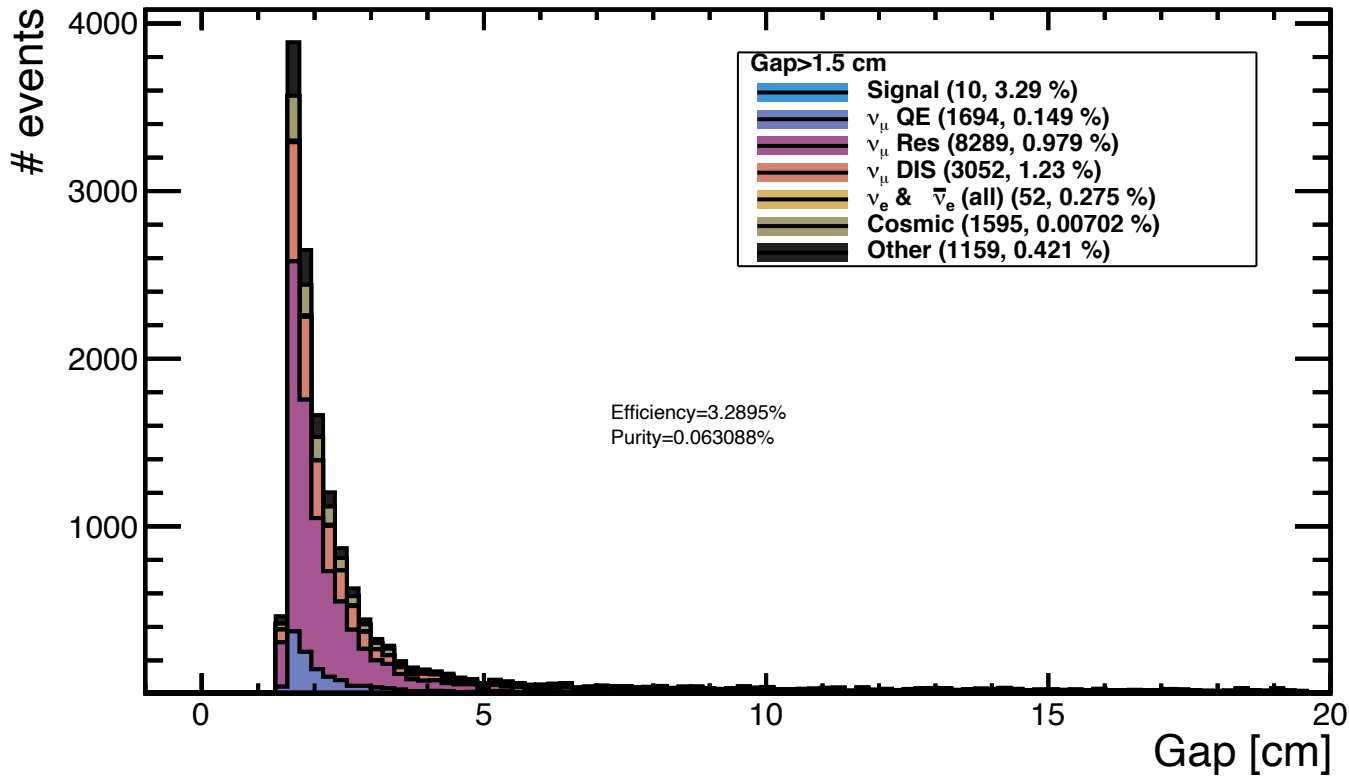


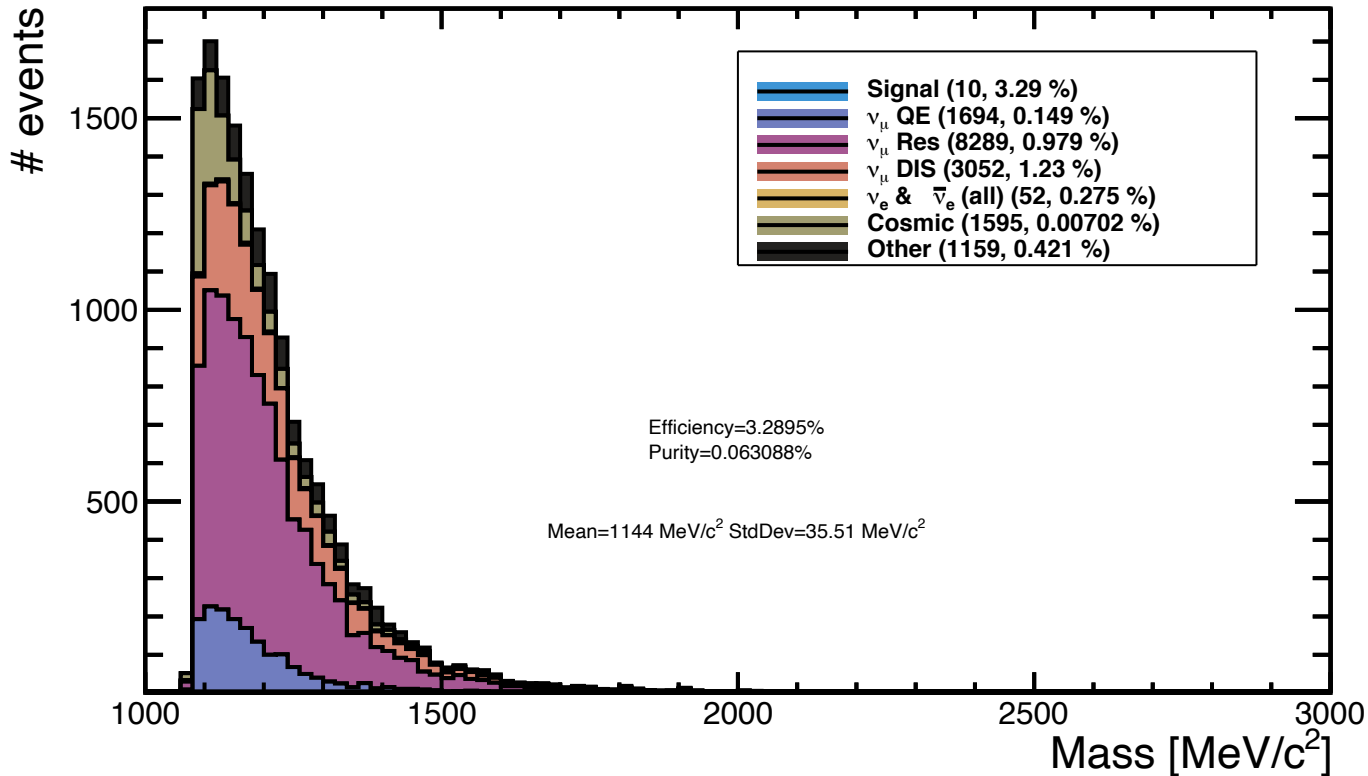


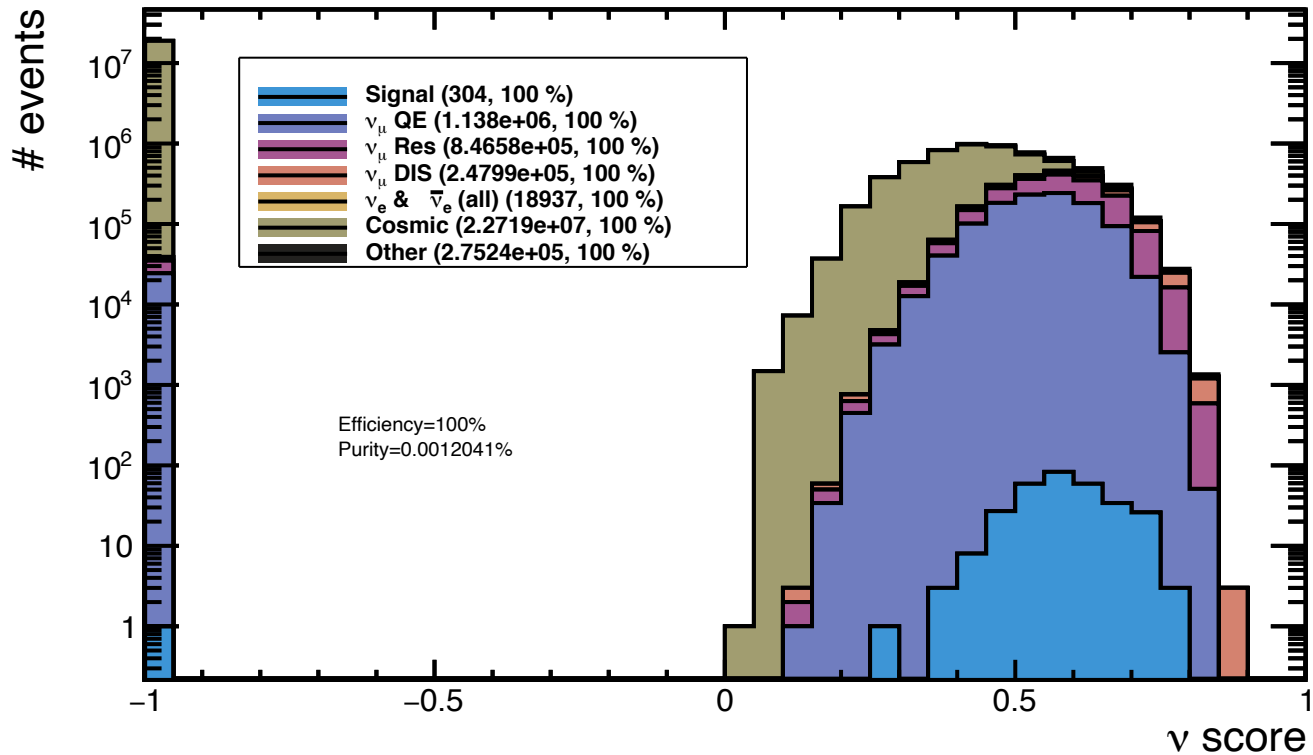


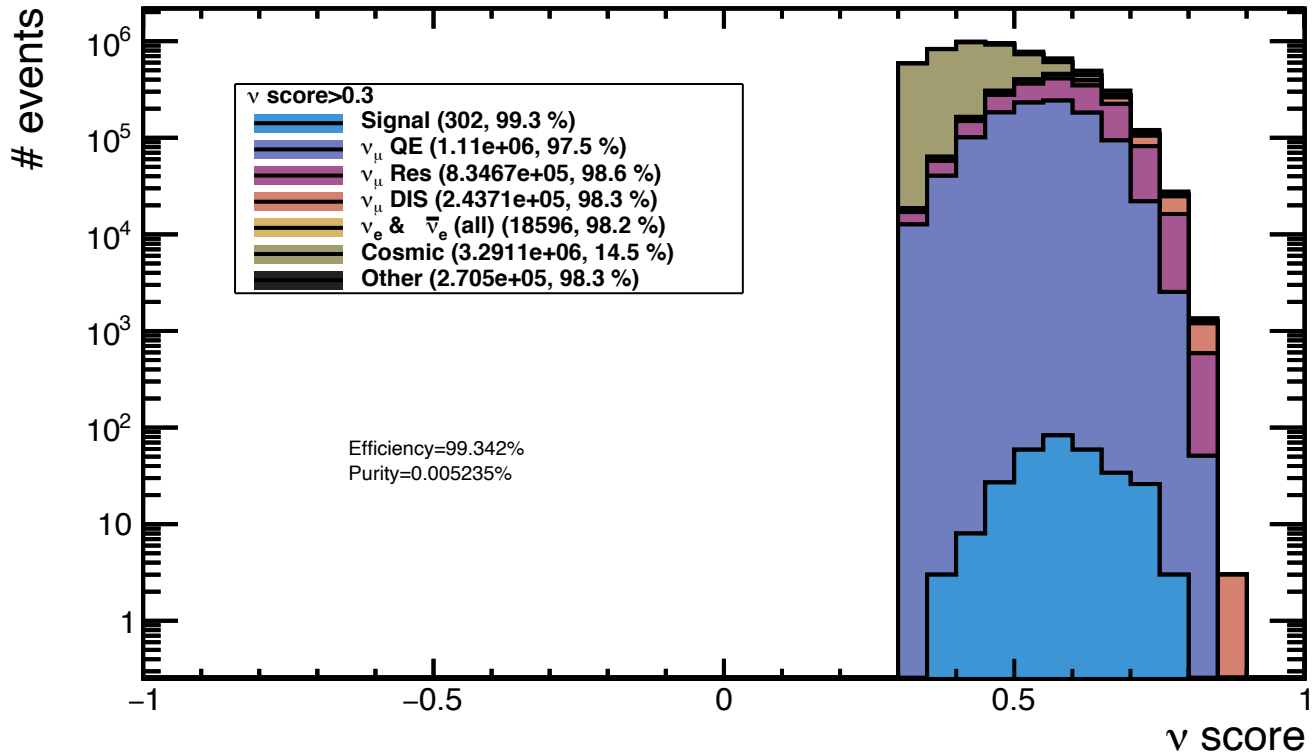


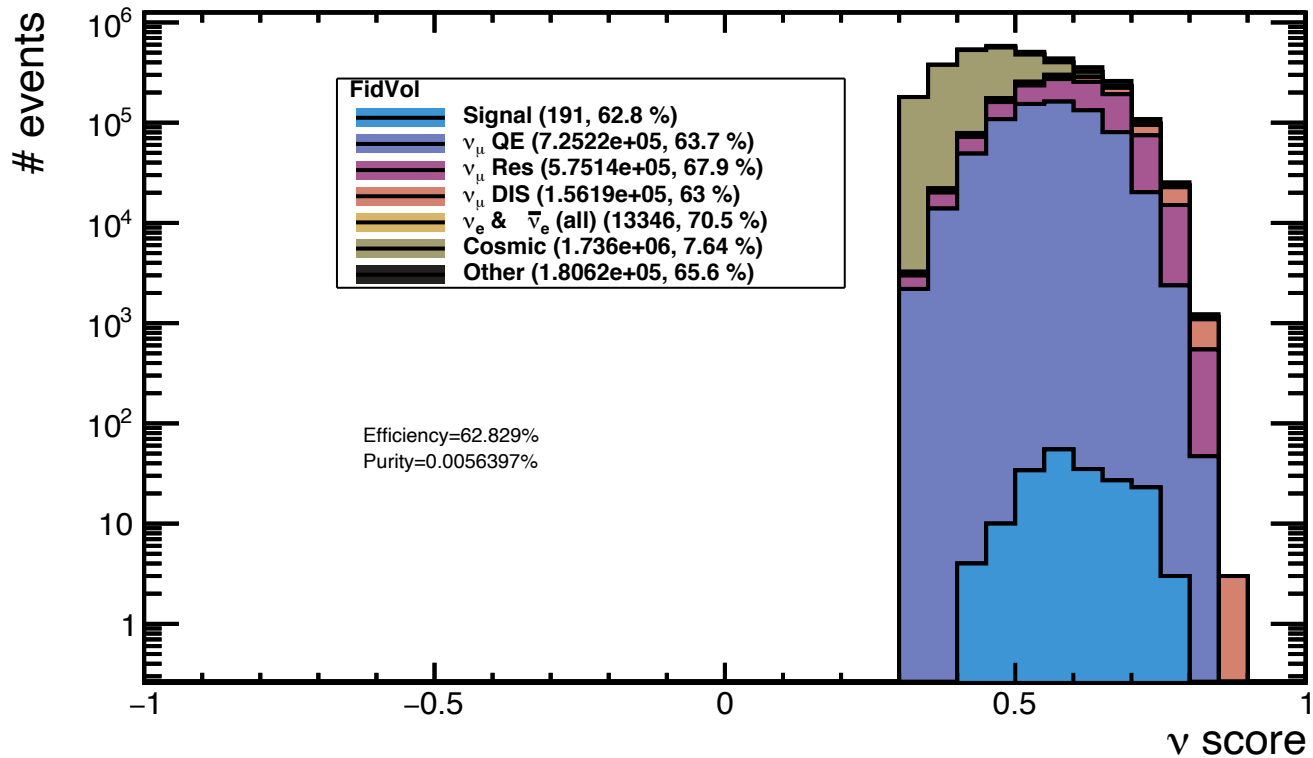




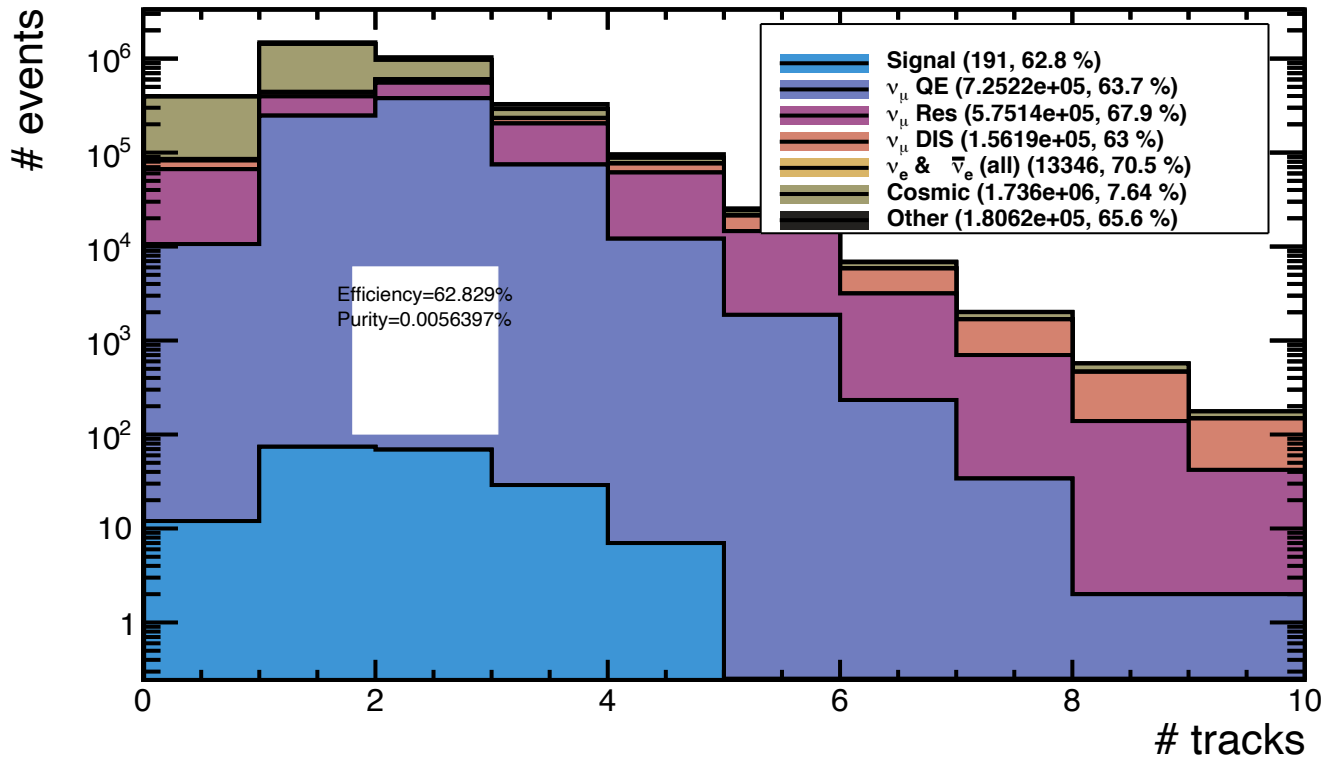


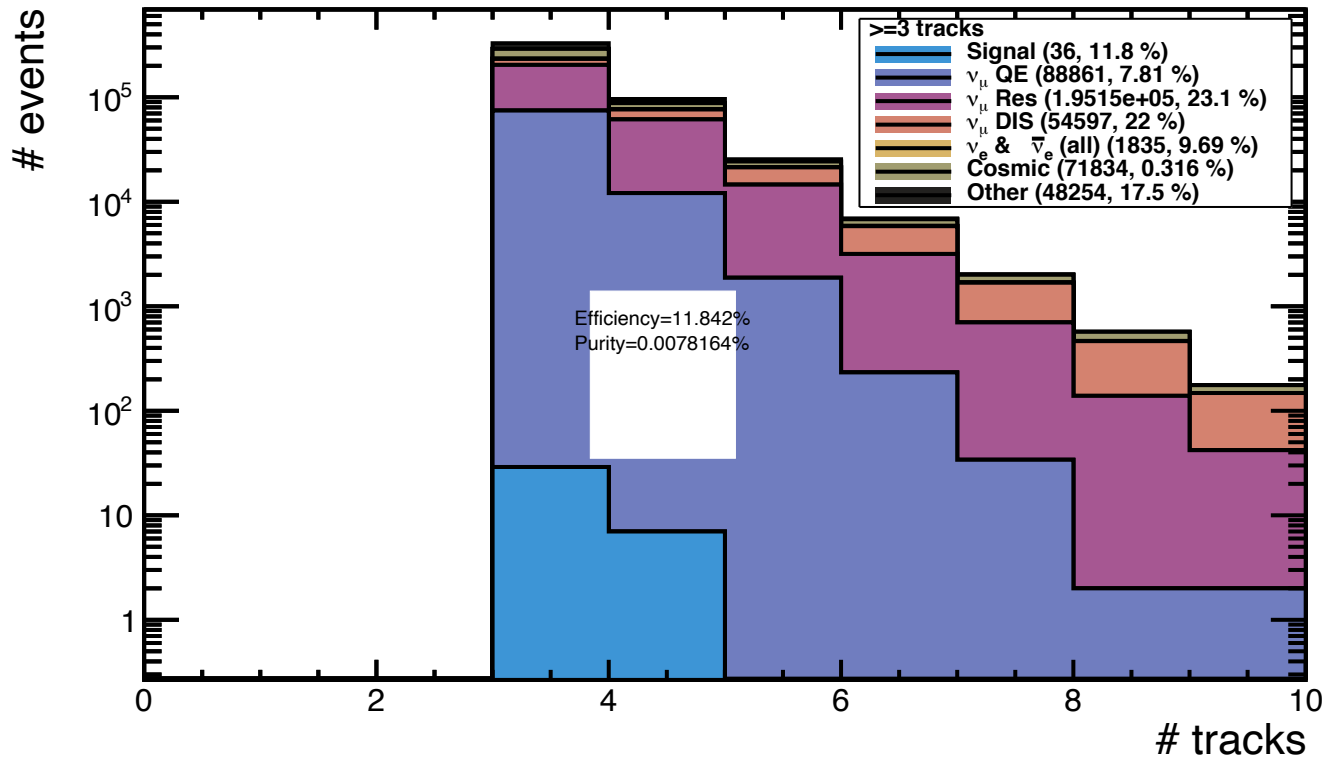


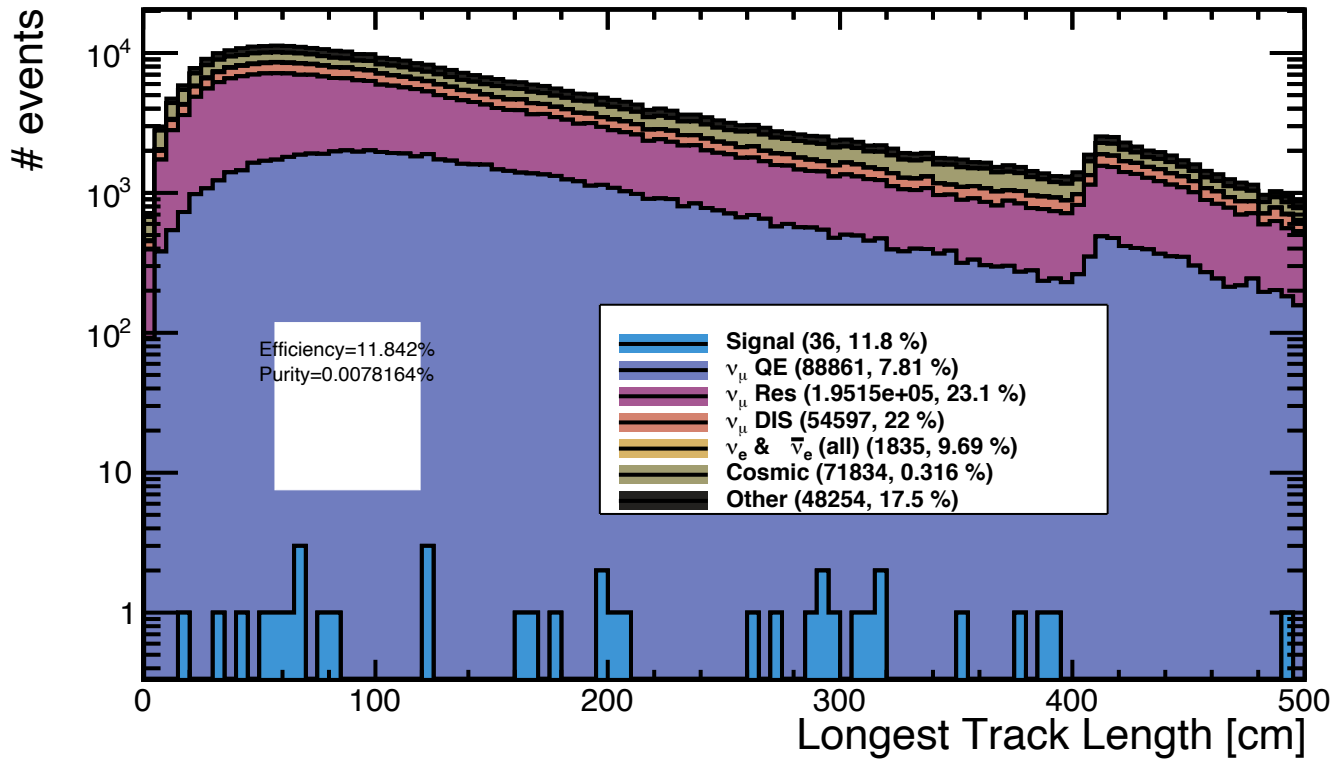


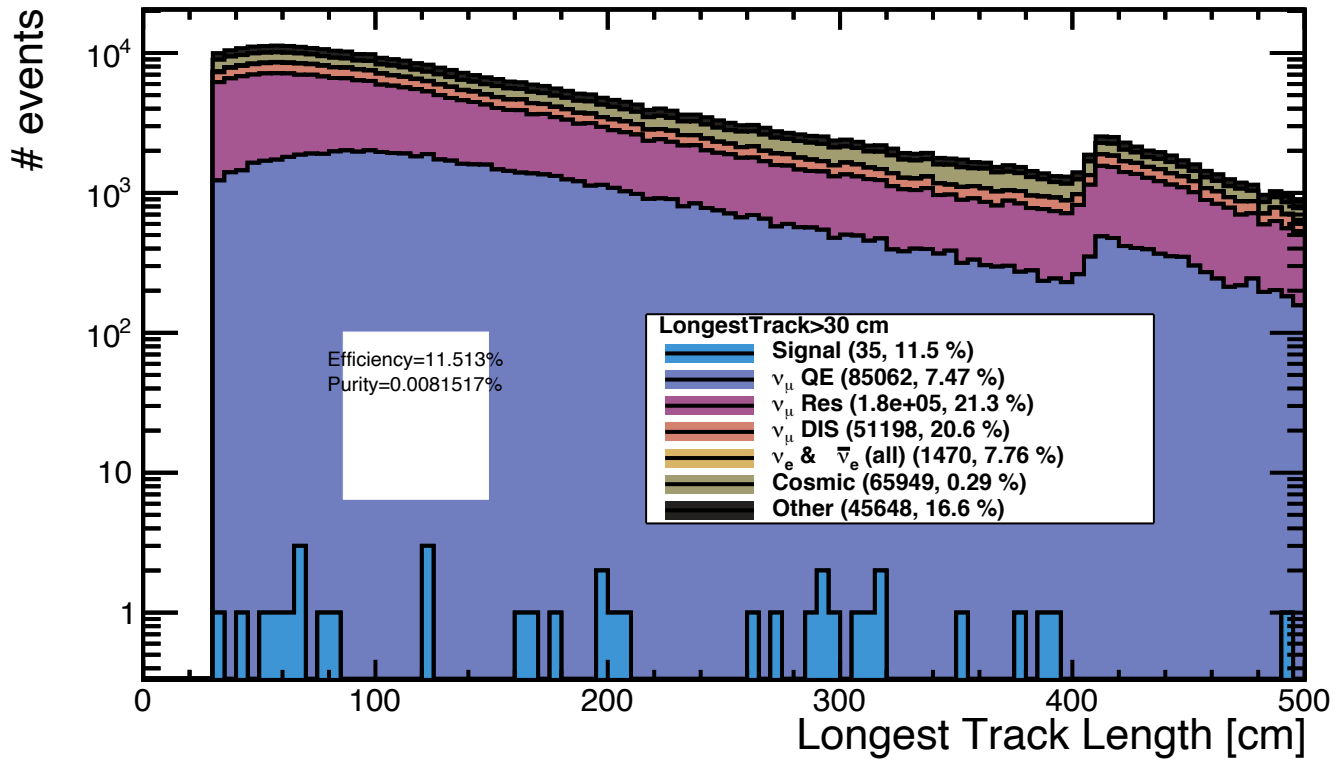


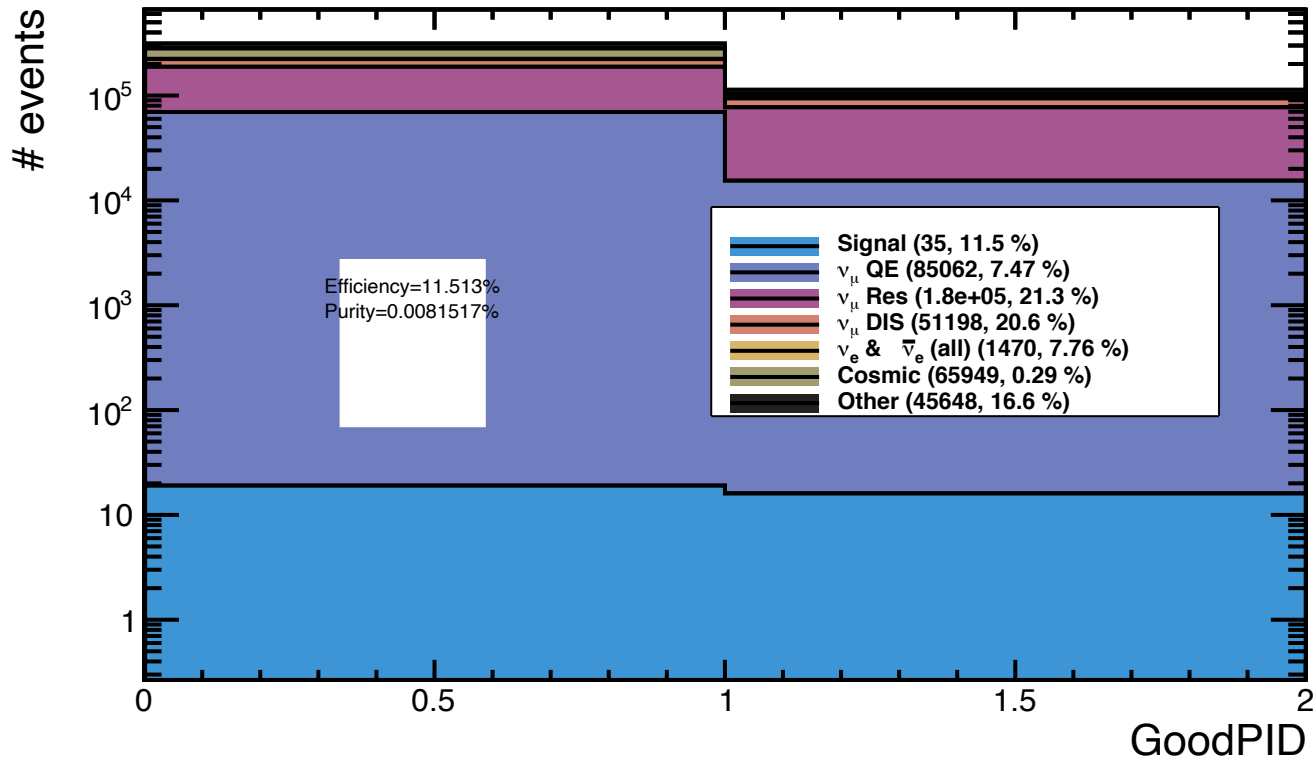


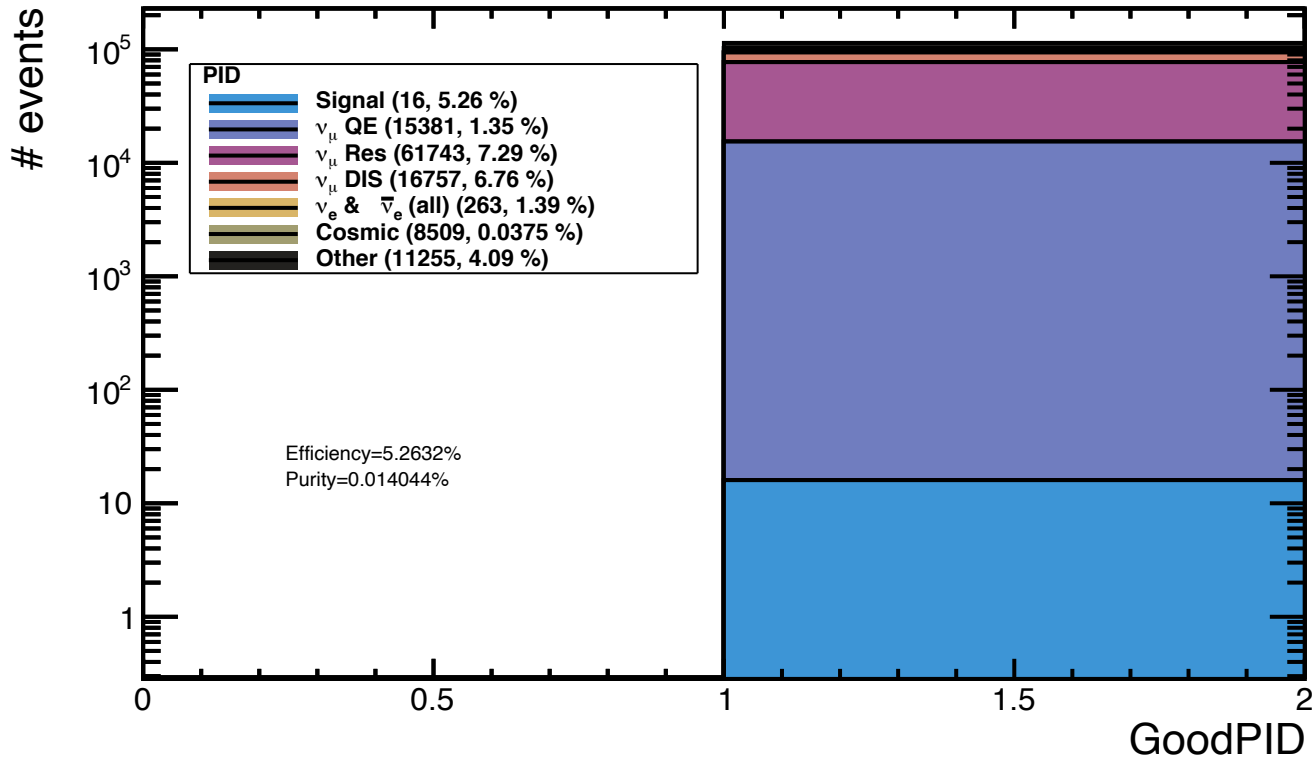


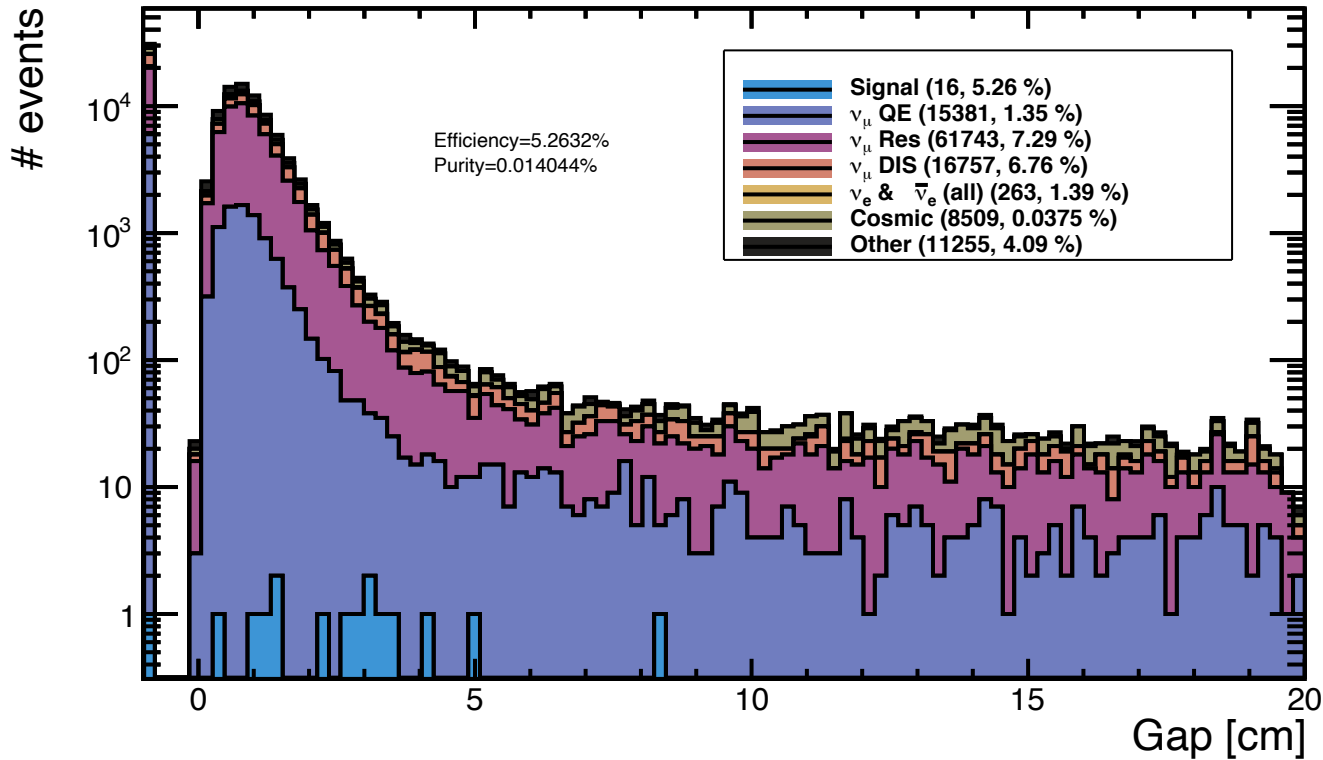


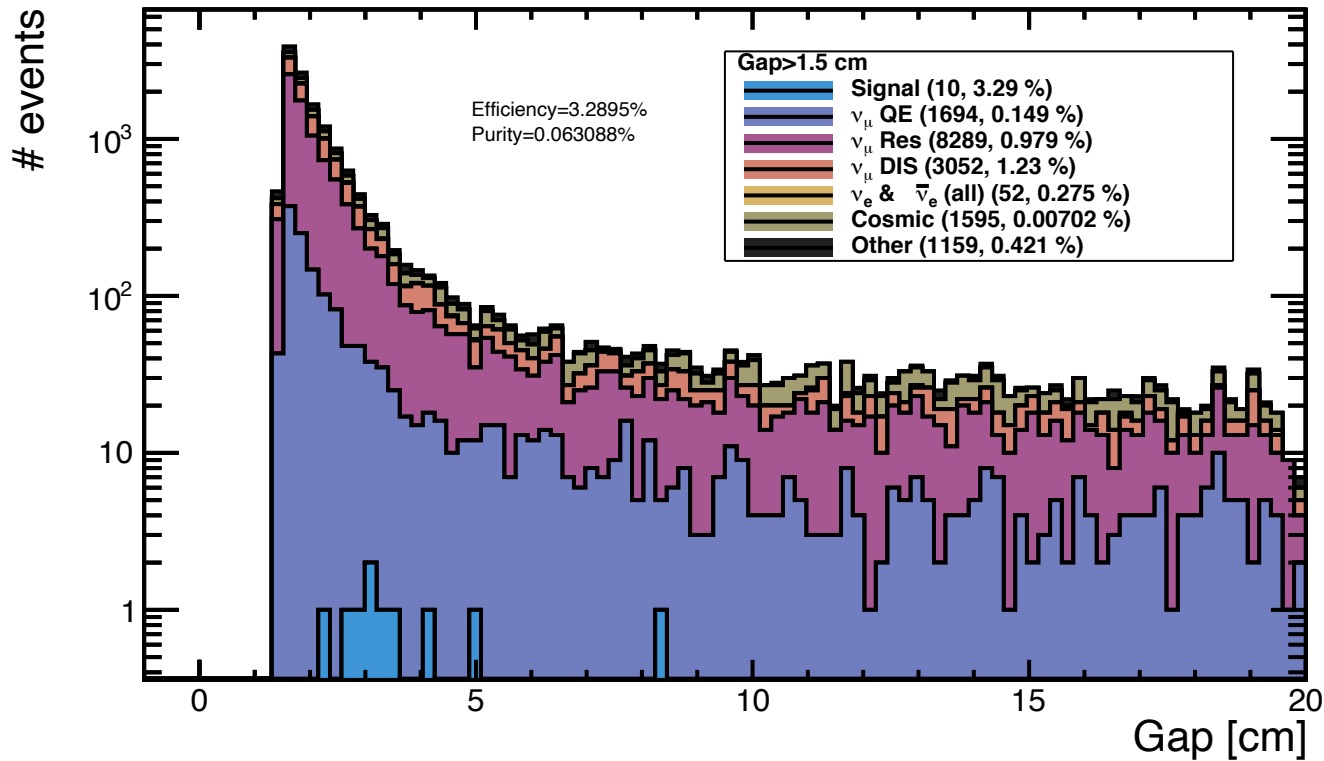




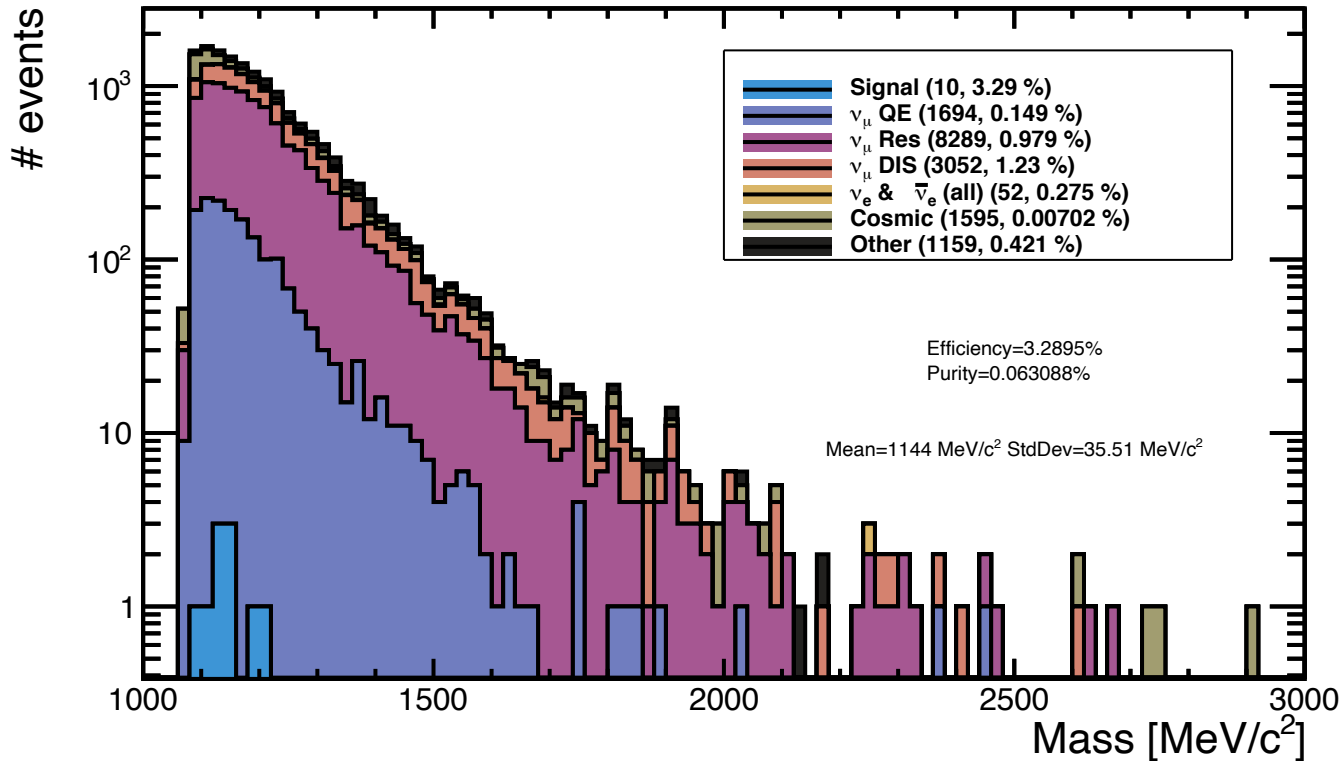






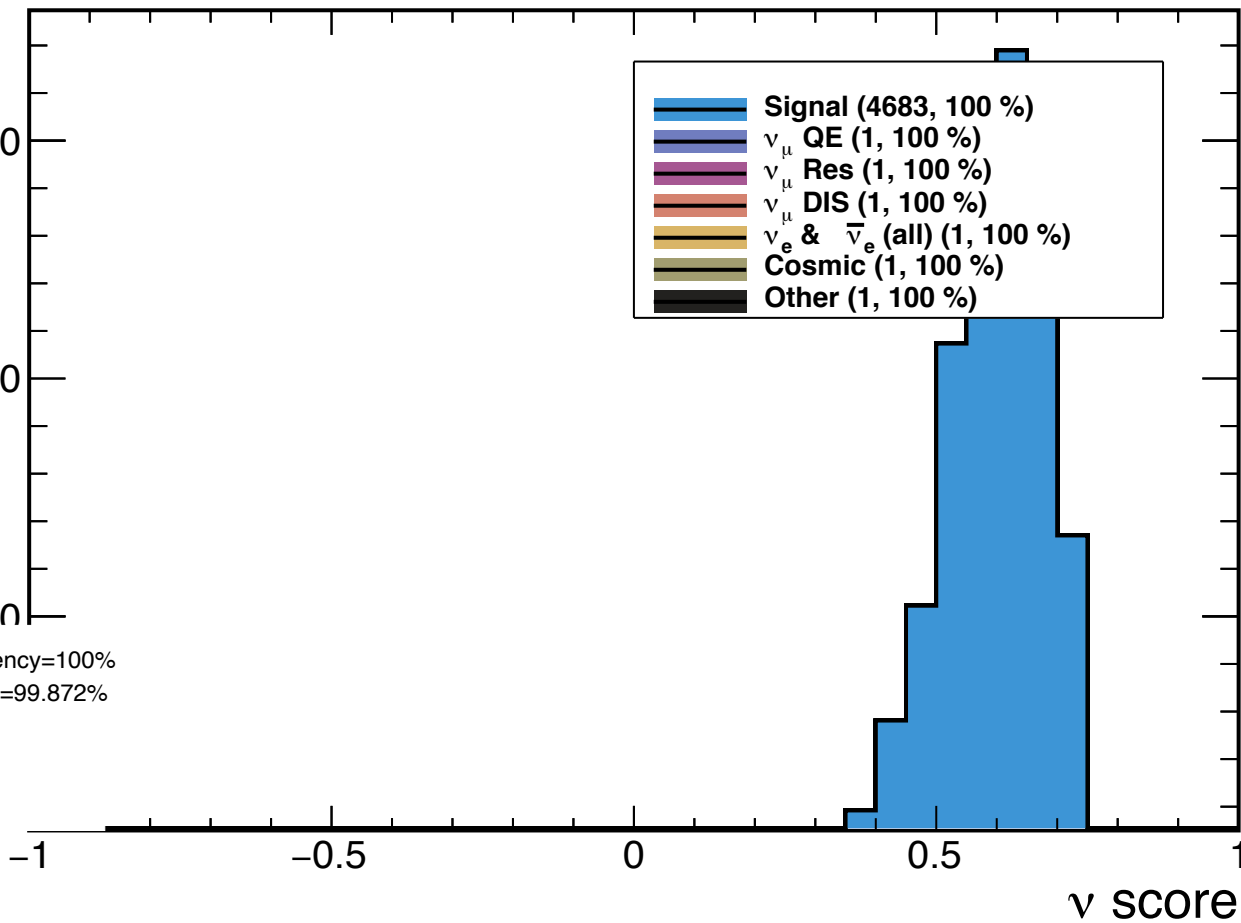






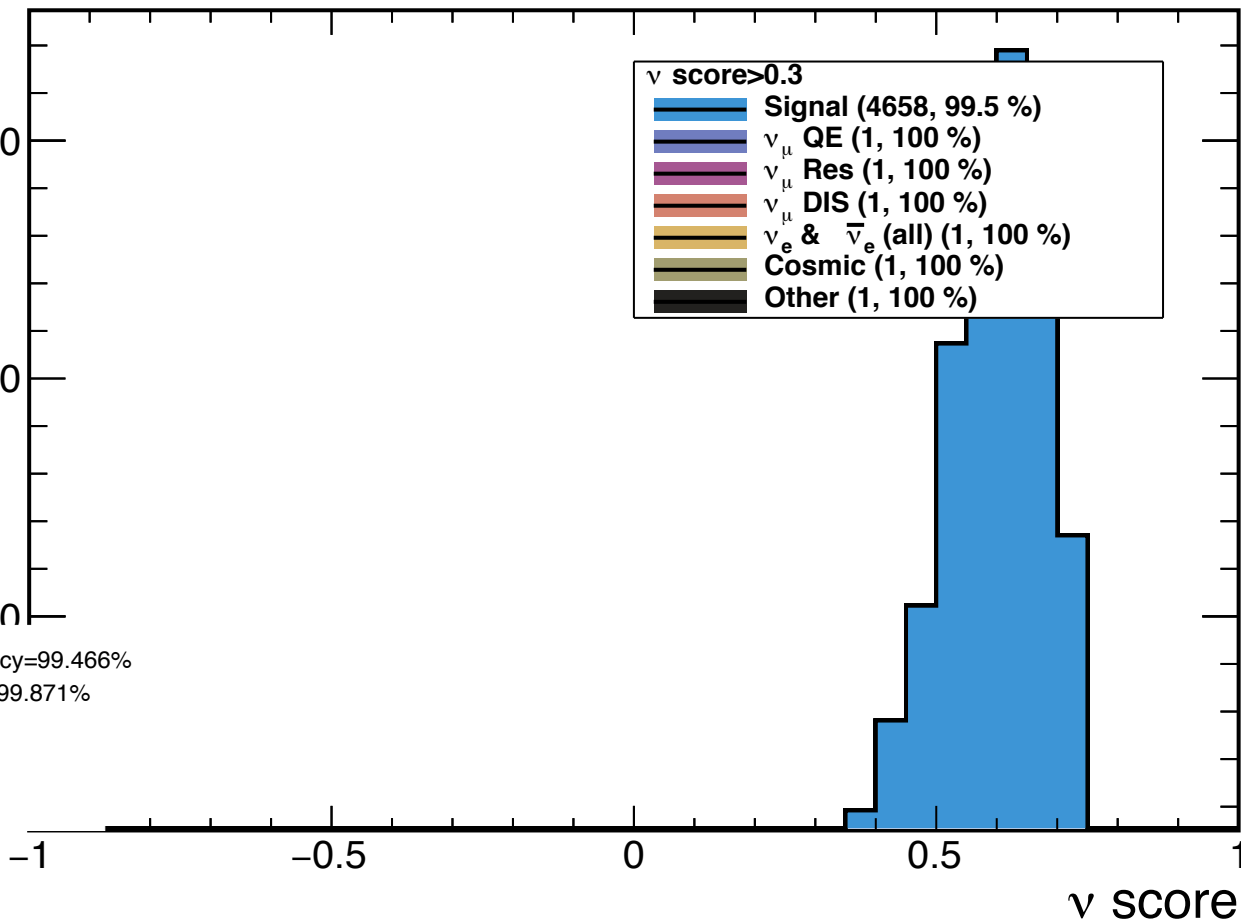
# events

Efficiency=100%  
Purity=99.872%



# events

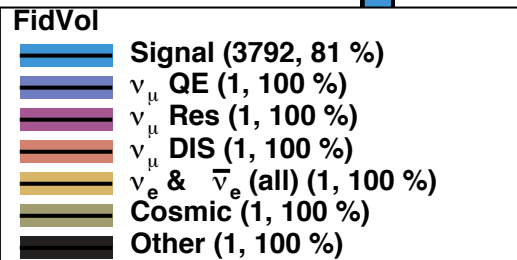
Efficiency=99.466%  
Purity=99.871%



# events

Efficiency=80.974%

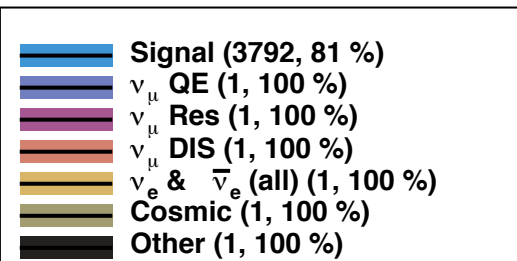
Purity=99.842%



$\nu$  score

# events

Efficiency=80.974%  
Purity=99.842%

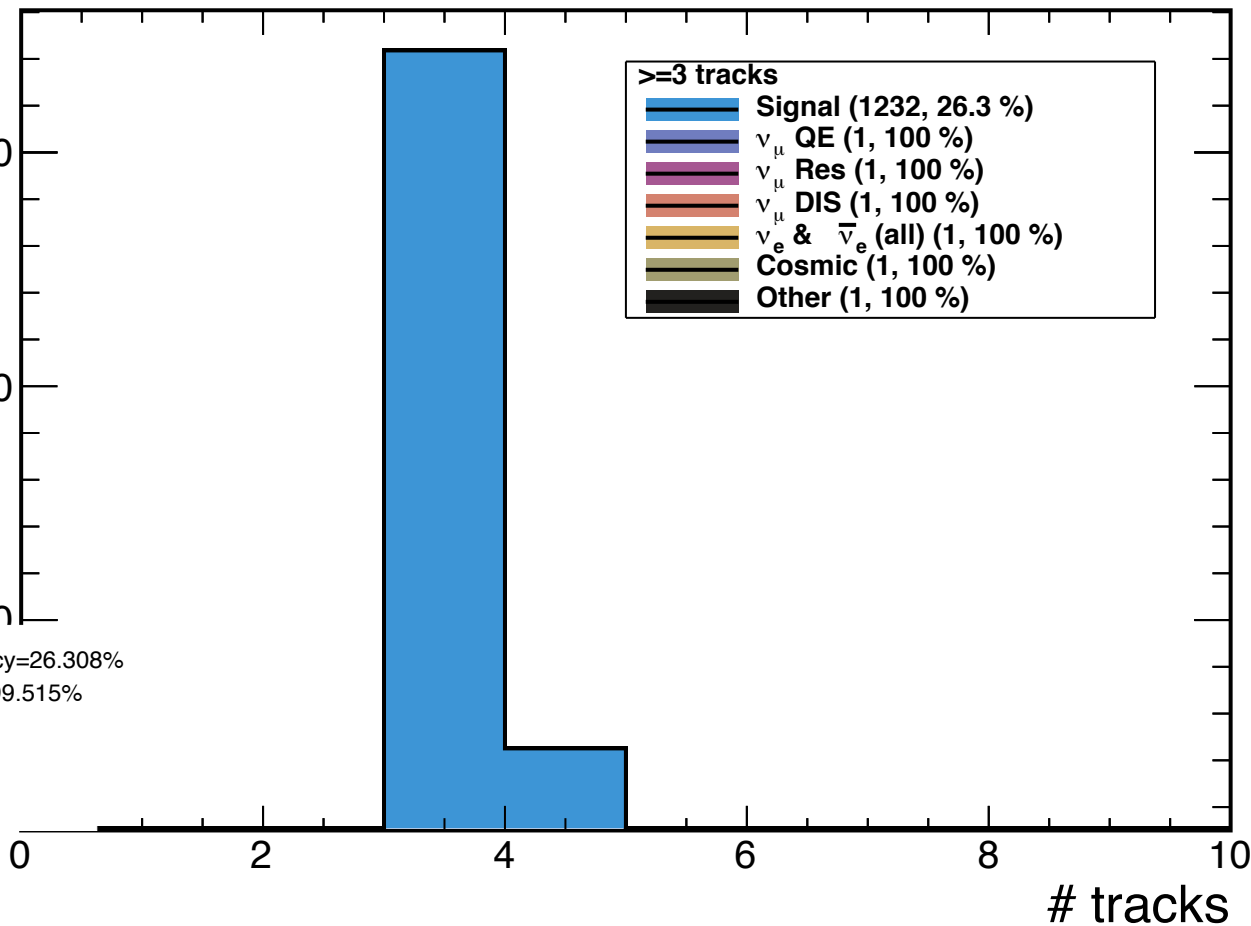


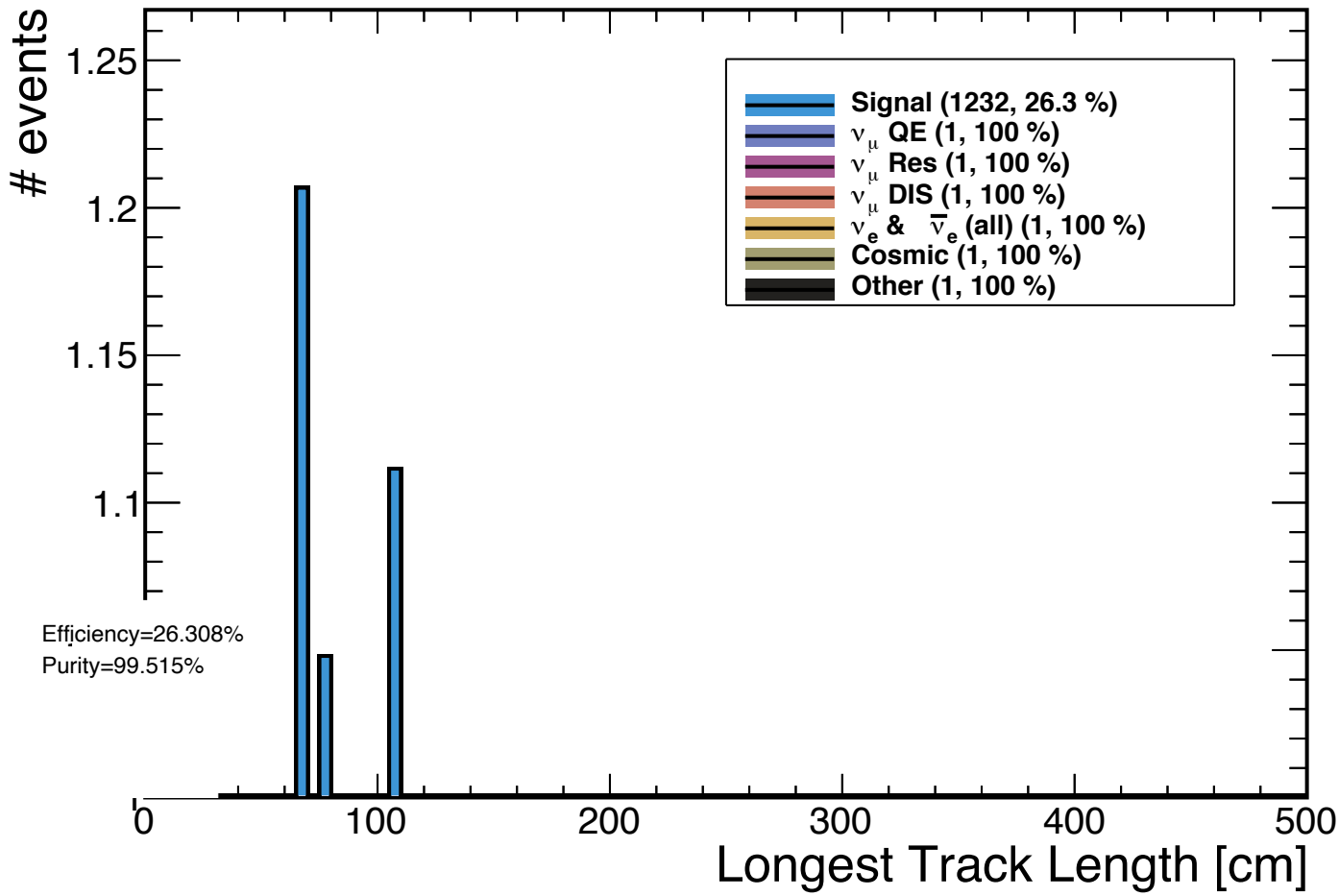
0 2 4 6 8 10

# tracks

# events

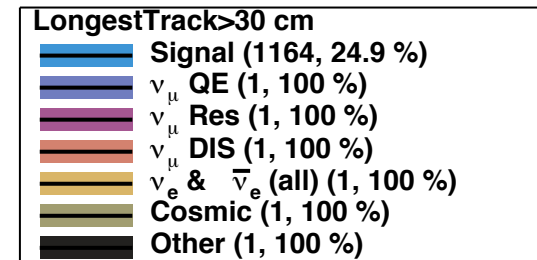
Efficiency=26.308%  
Purity=99.515%





# events

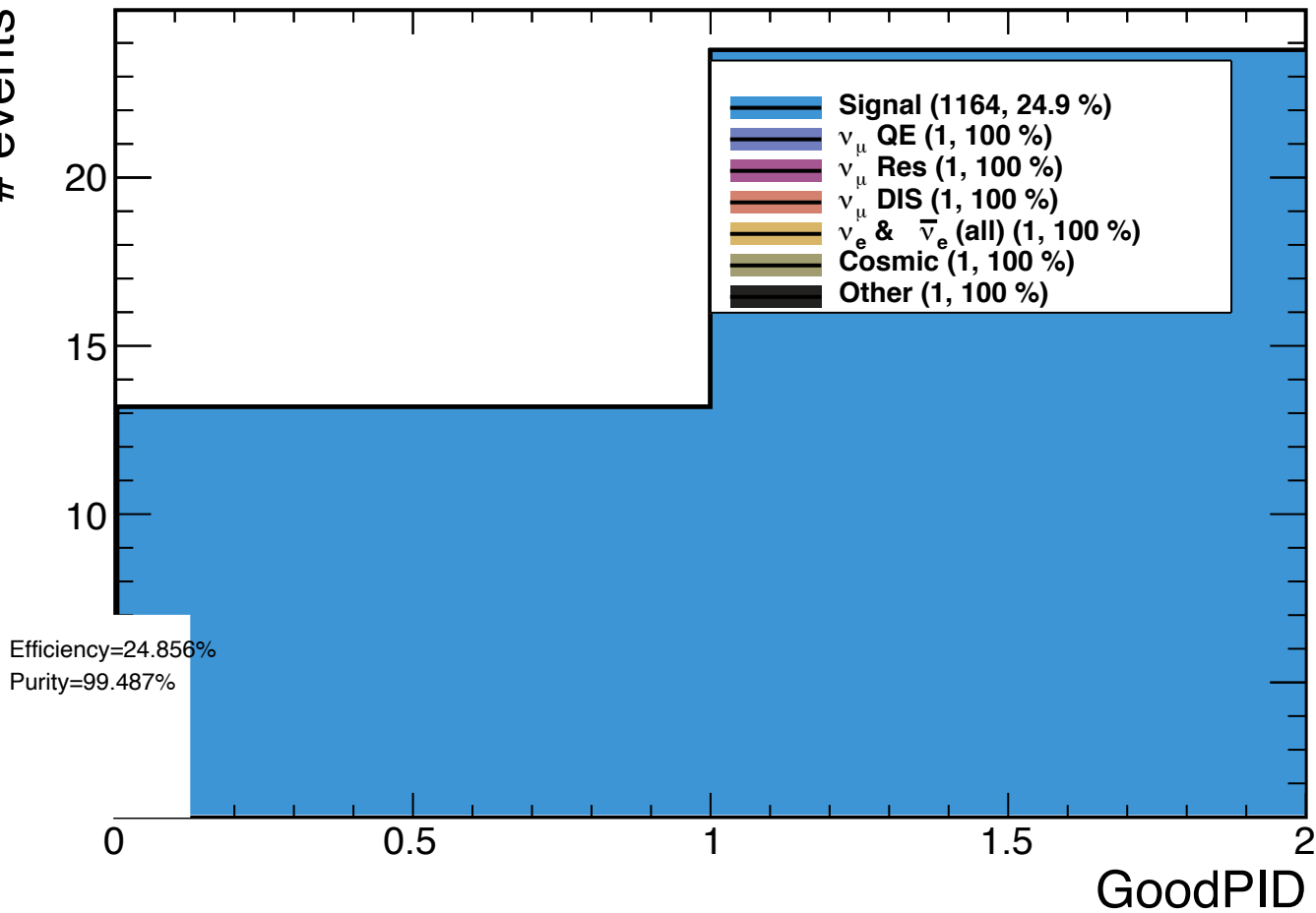
Efficiency=24.856%  
Purity=99.487%



Longest Track Length [cm]



# events

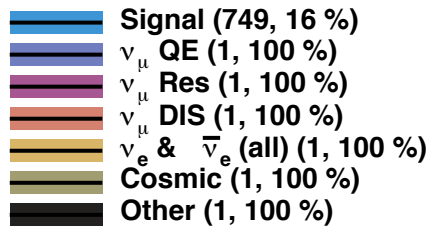


# events

Efficiency=15.994%

Purity=99.205%

PID



0

0.5

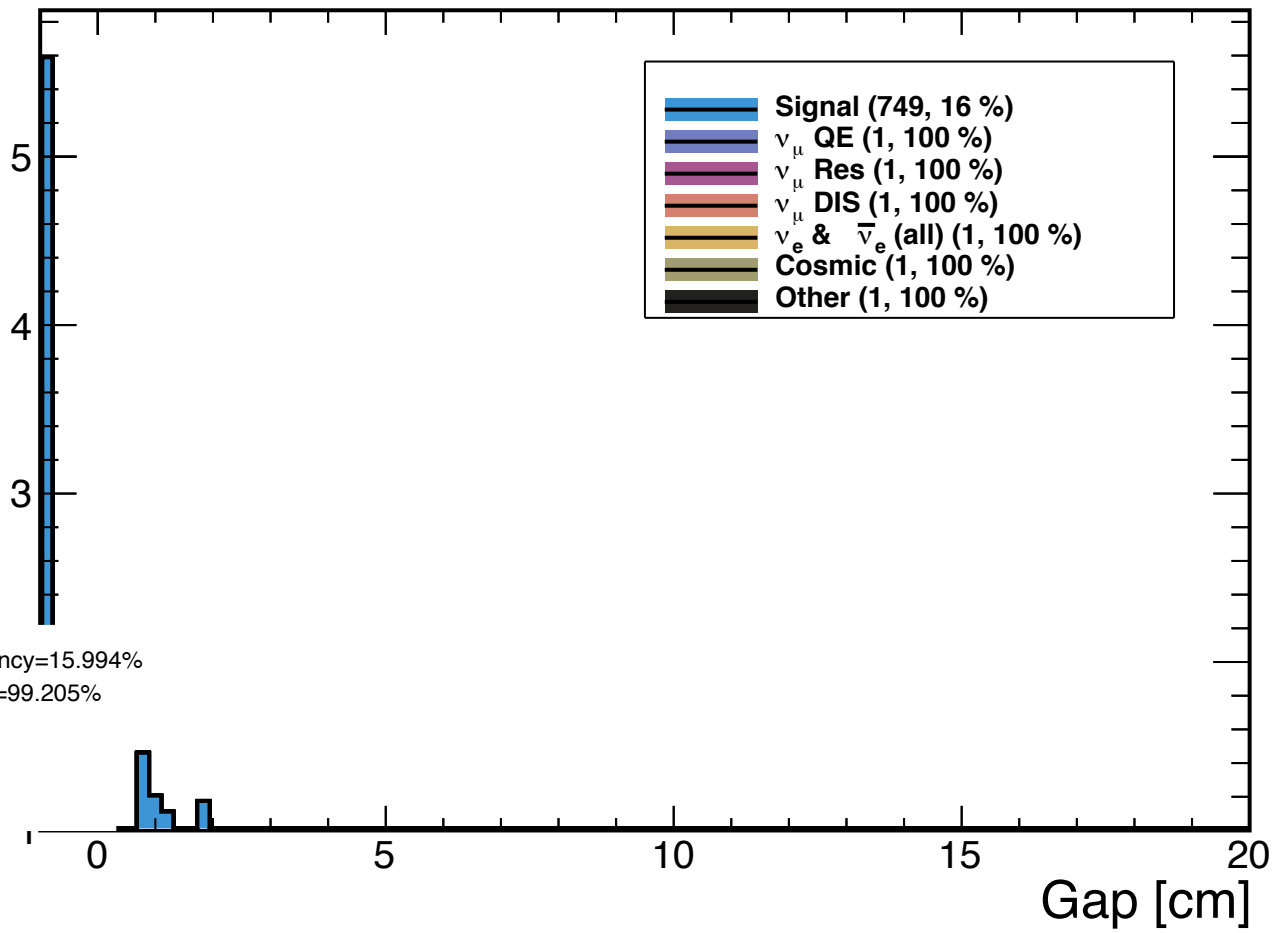
1

1.5

2

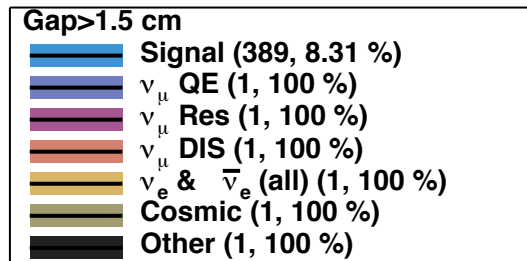
GoodPID

# events



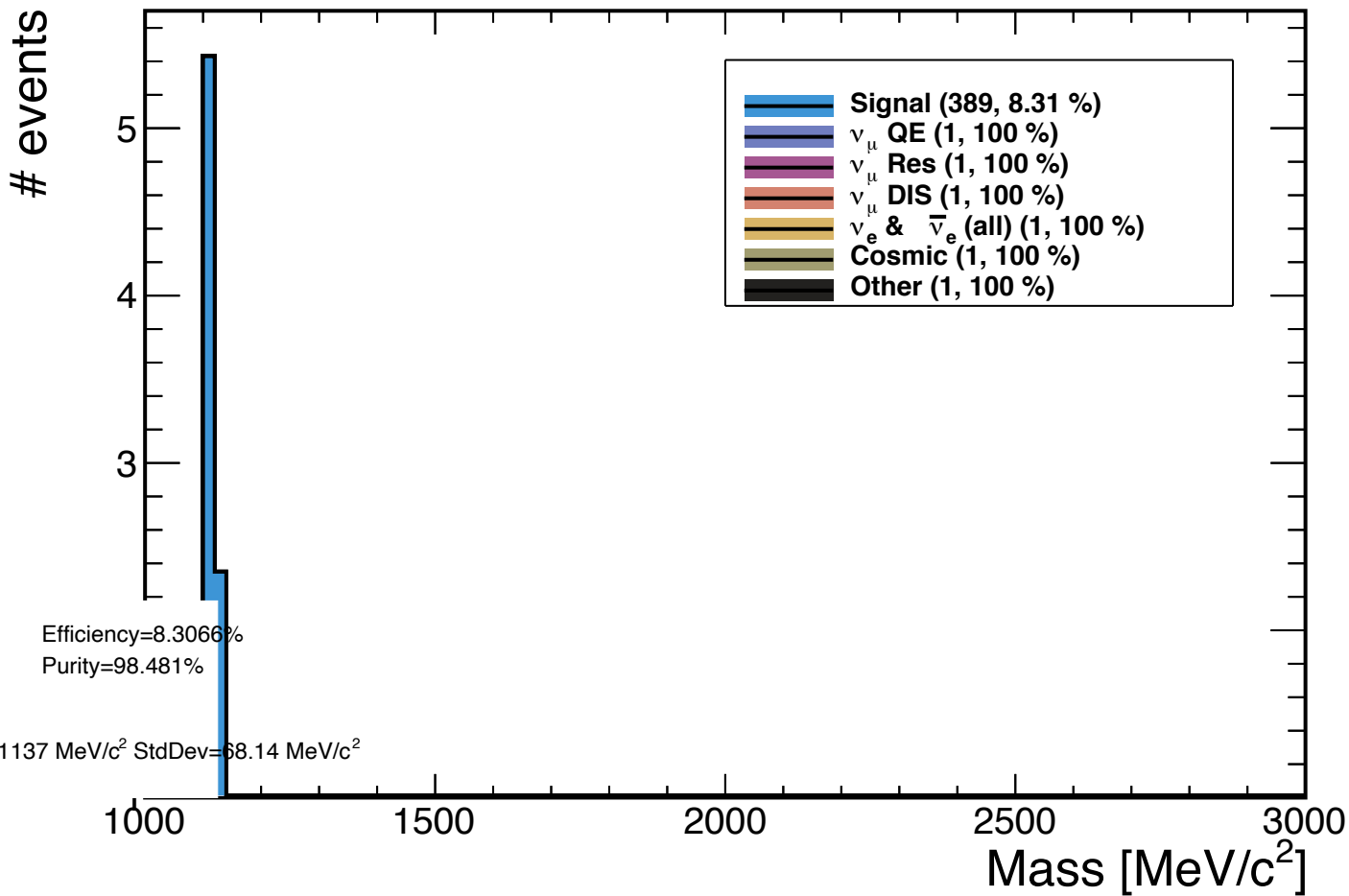
# events

Efficiency=8.3066%  
Purity=98.481%



Gap [cm]

# events

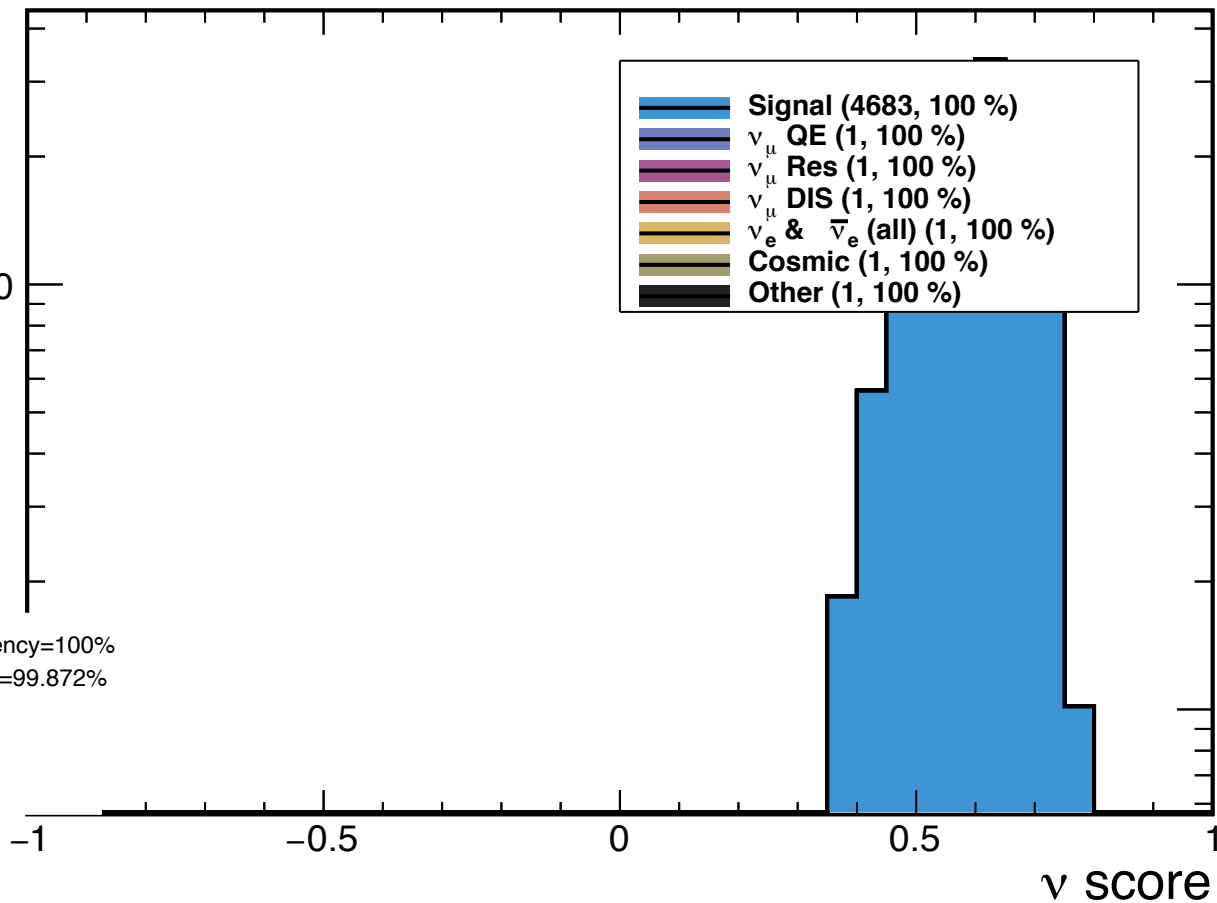


# events

10

Efficiency=100%

Purity=99.872%

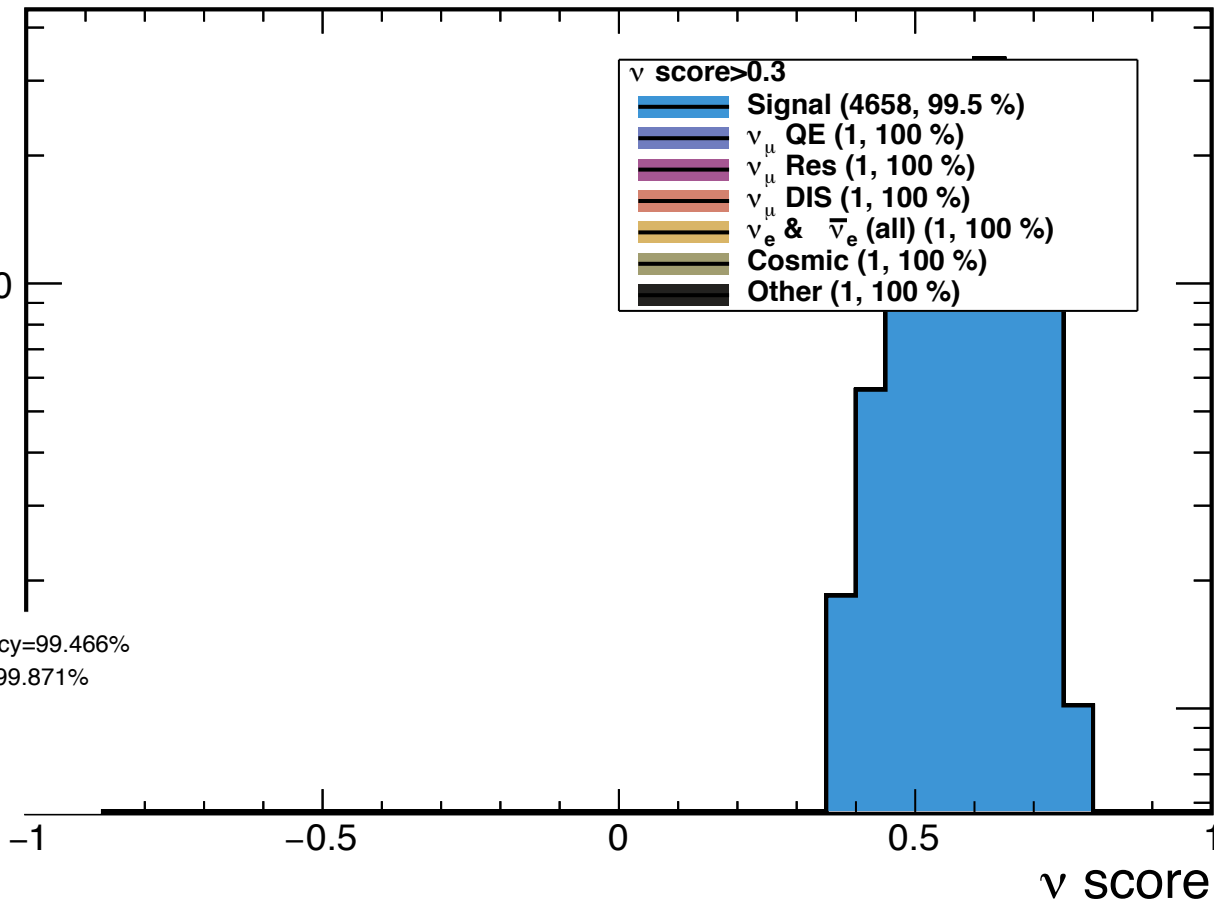


# events

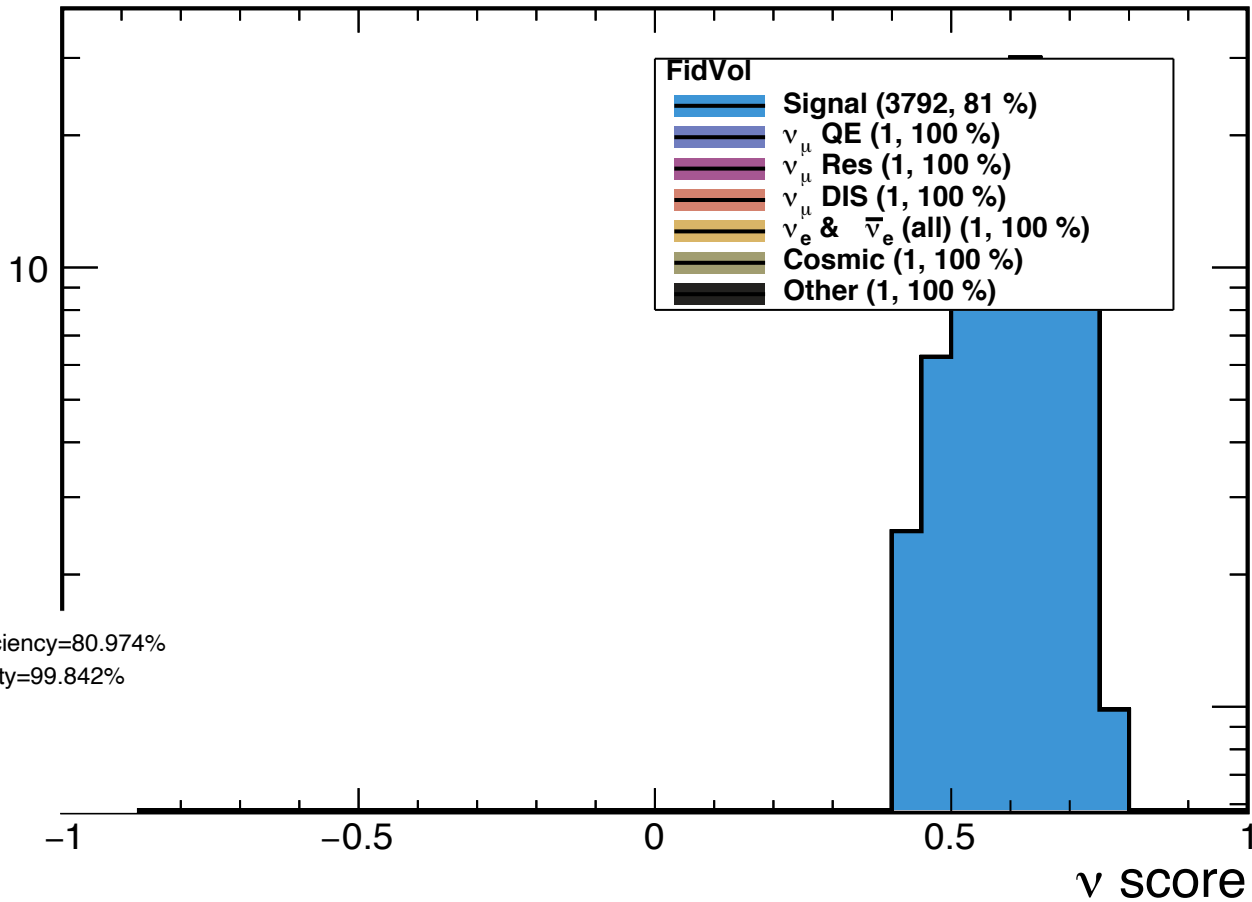
10

Efficiency=99.466%

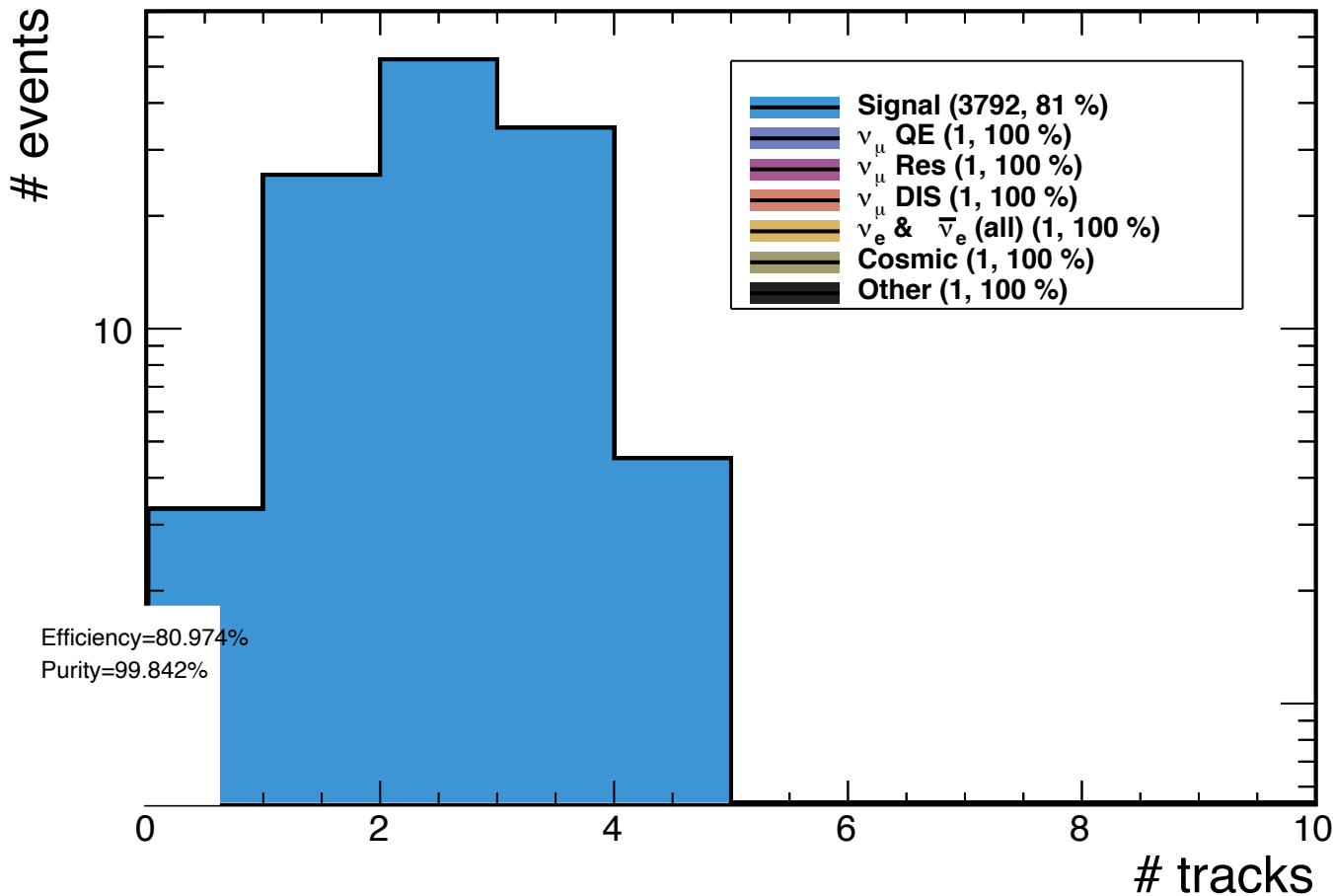
Purity=99.871%



# events







# events

10

Efficiency=26.308%

Purity=99.515%

0

2

4

6

8

10

# tracks

**>=3 tracks**

Signal (1232, 26.3 %)

$\nu_\mu$  QE (1, 100 %)

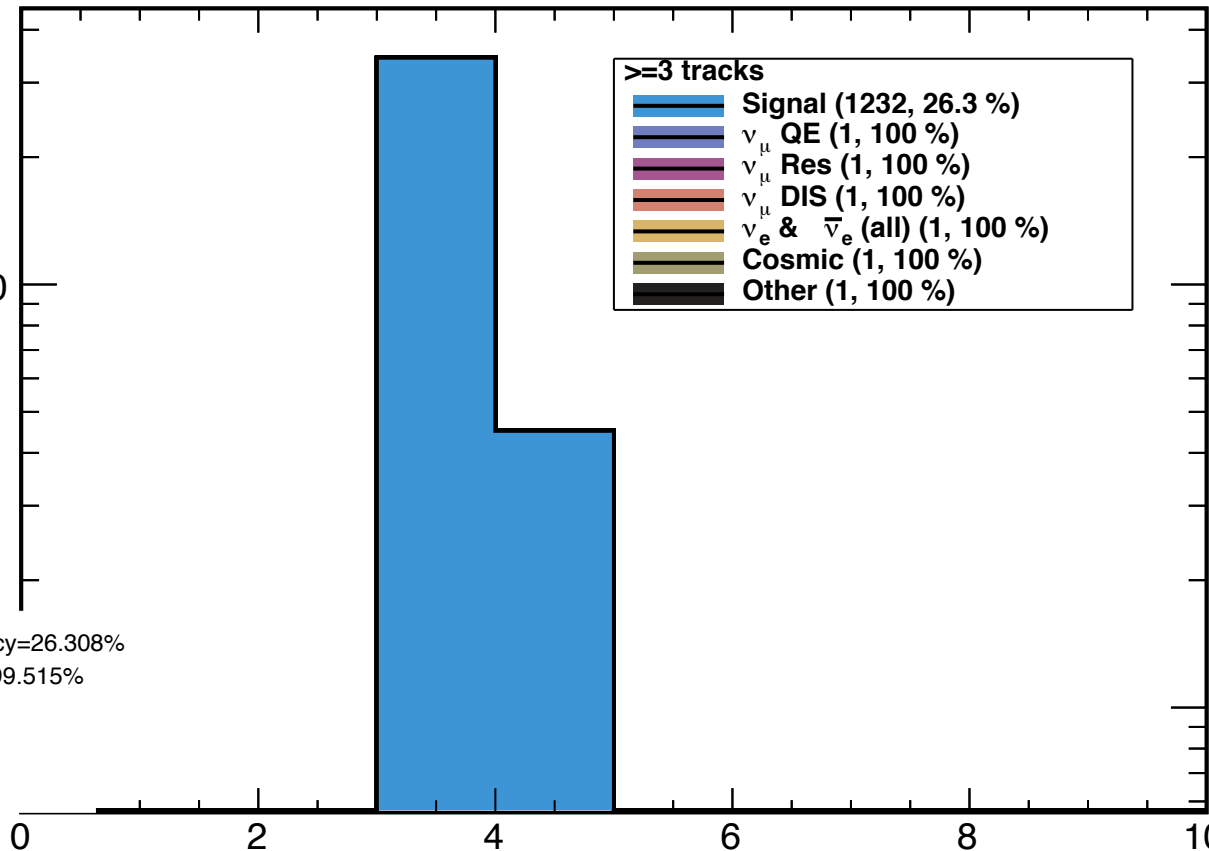
$\nu_\mu$  Res (1, 100 %)

$\nu_\mu$  DIS (1, 100 %)

$\nu_e$  &  $\bar{\nu}_e$  (all) (1, 100 %)

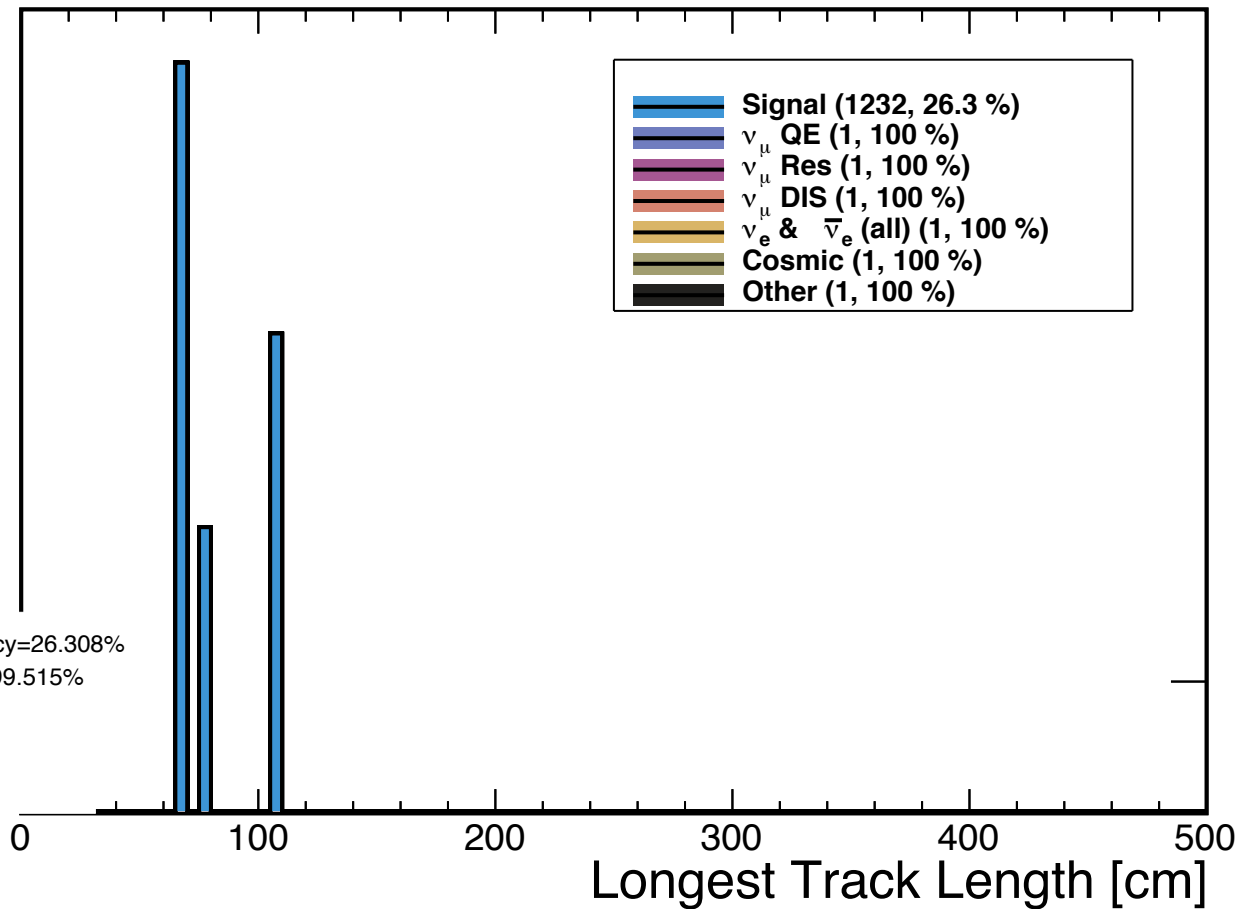
Cosmic (1, 100 %)

Other (1, 100 %)



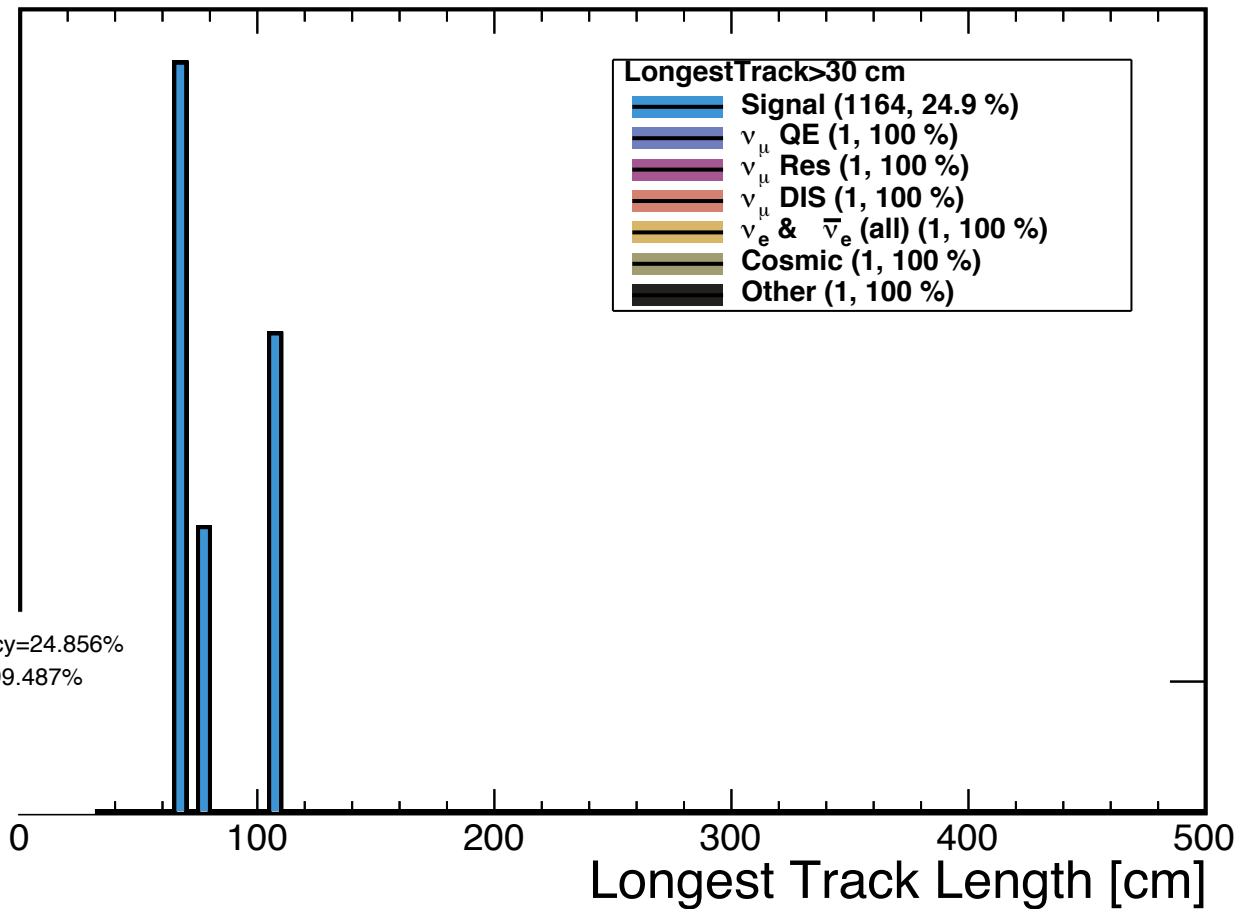
# events

Efficiency=26.308%  
Purity=99.515%

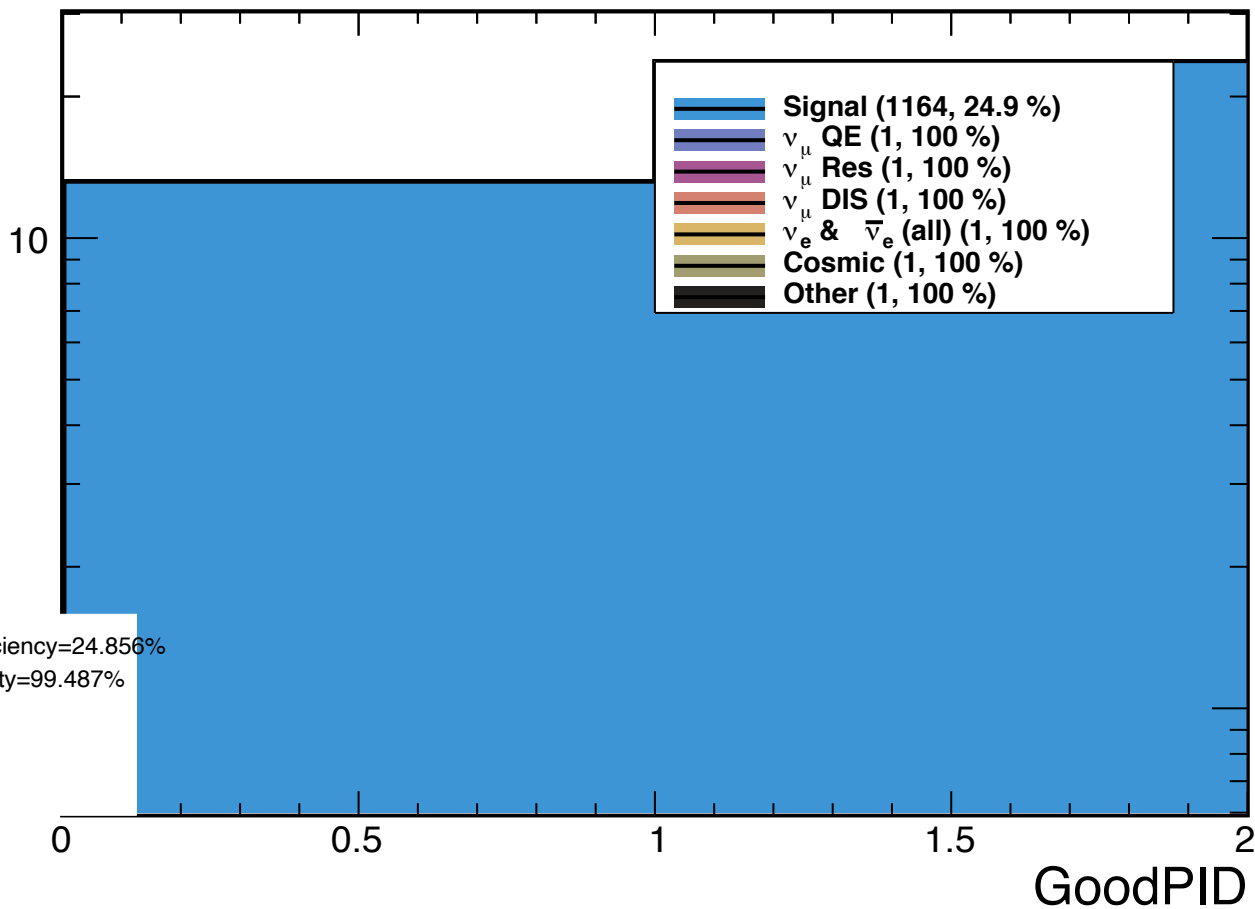


# events

Efficiency=24.856%  
Purity=99.487%



# events



# events

10

Efficiency=15.994%

Purity=99.205%

0

0.5

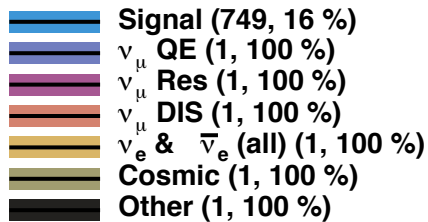
1

1.5

2

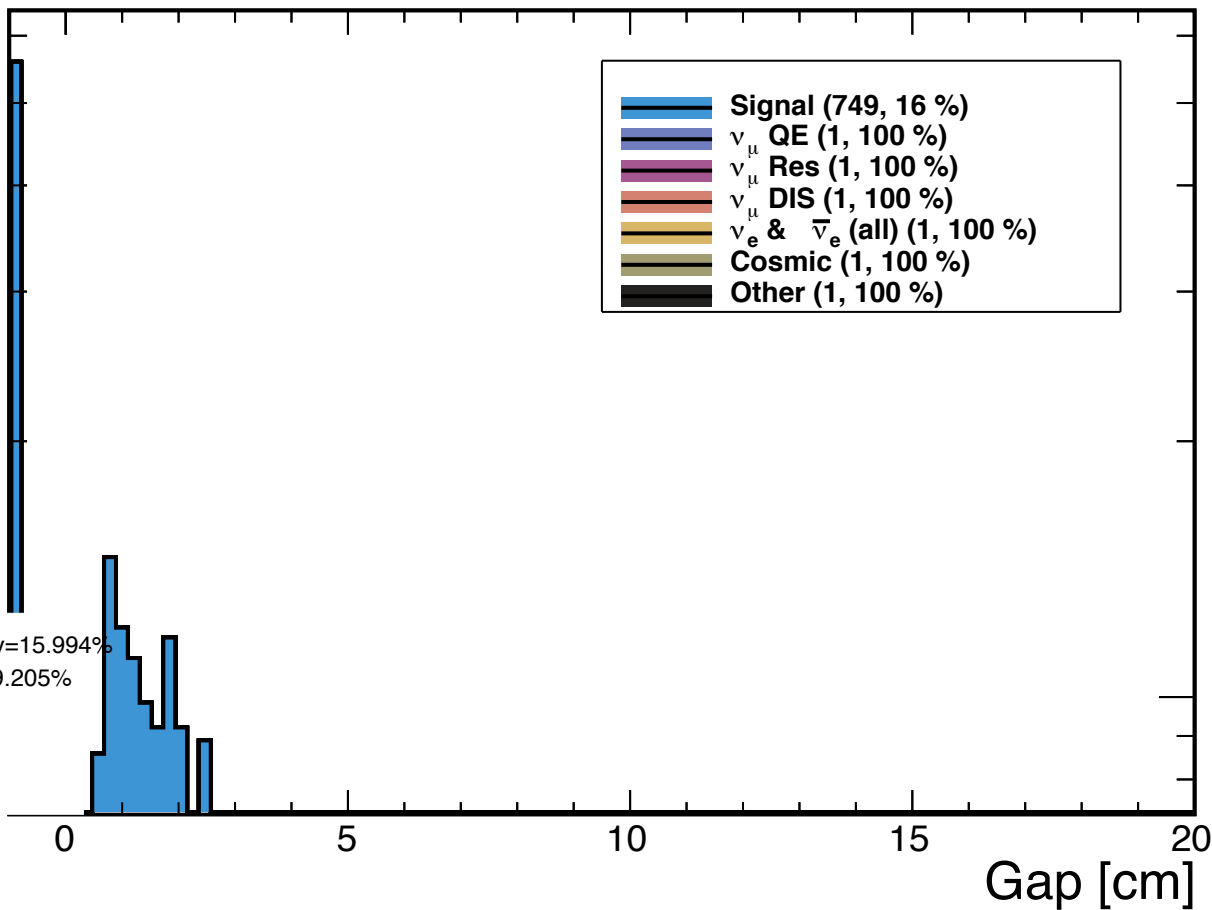
GoodPID

PID



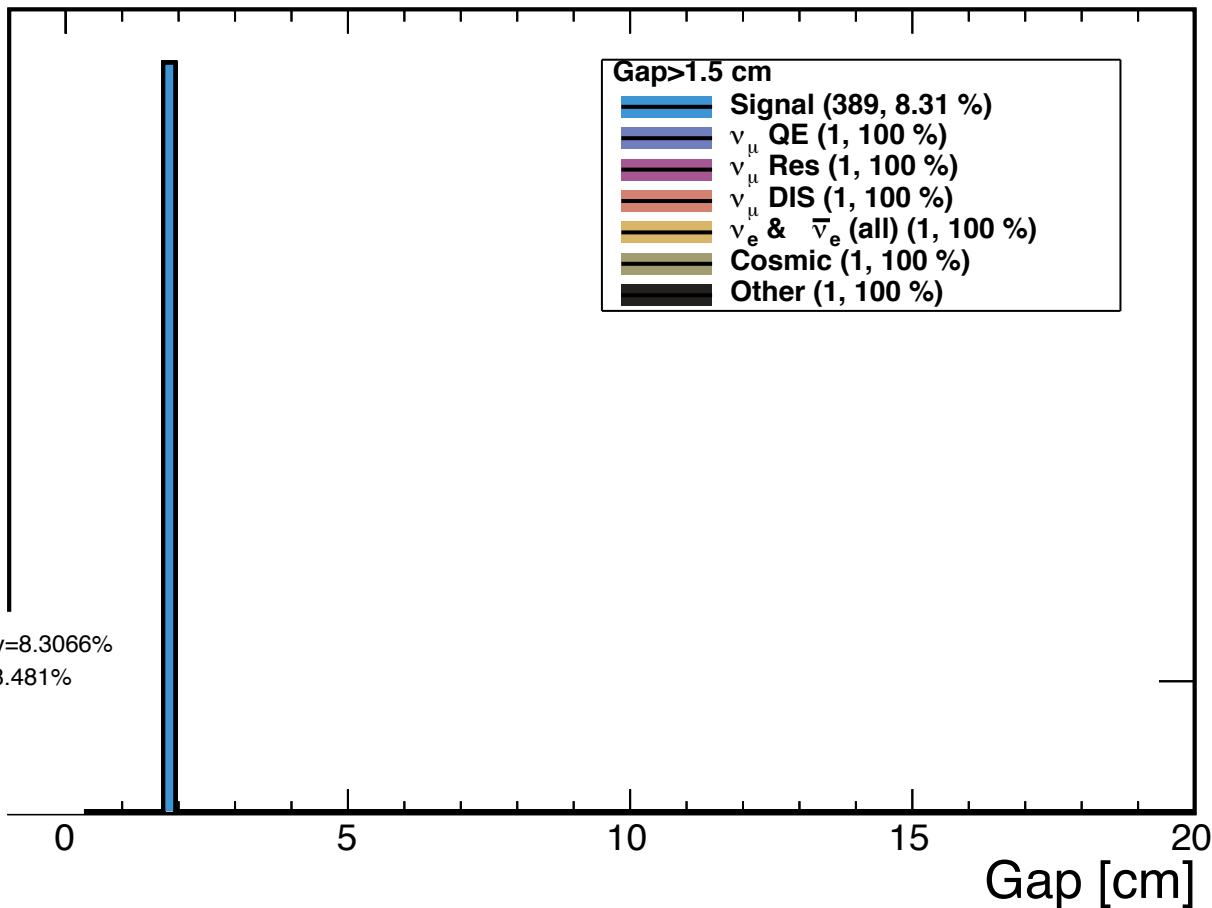
# events

Efficiency=15.994%  
Purity=99.205%



# events

Efficiency=8.3066%  
Purity=98.481%





# events

Efficiency=8.3066%  
Purity=98.481%

1137 MeV/c<sup>2</sup> StdDev=68.14 MeV/c<sup>2</sup>

