SC 1000 TestBeam Sept 2025

Merged data from Mu2e and CAEN

Run 53 (protons Ek=100 MeV, 1mV/fC)

Run 64 (protons Ek=200 MeV, 1mV/fC)

Run 5 (protons Ek=300 MeV, 1mV/fC)

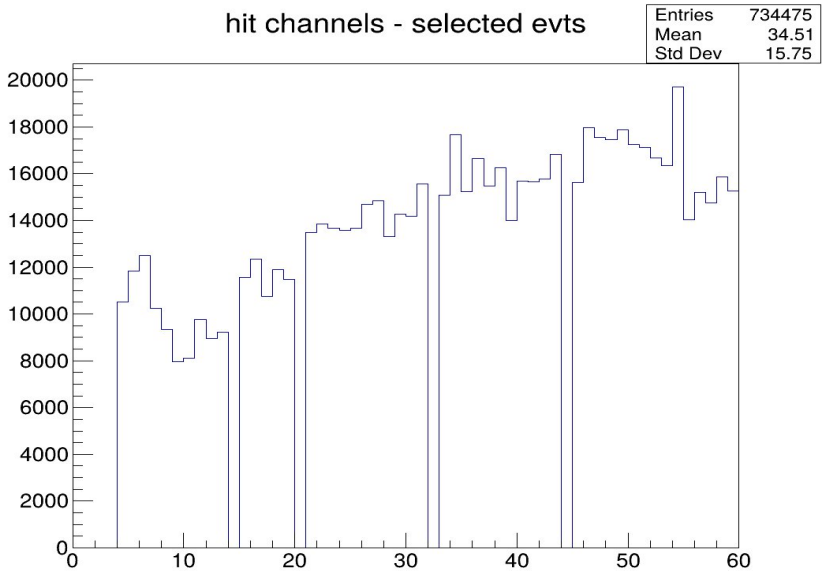
Run 67 (protons Ek=400 MeV, 1mV/fC)

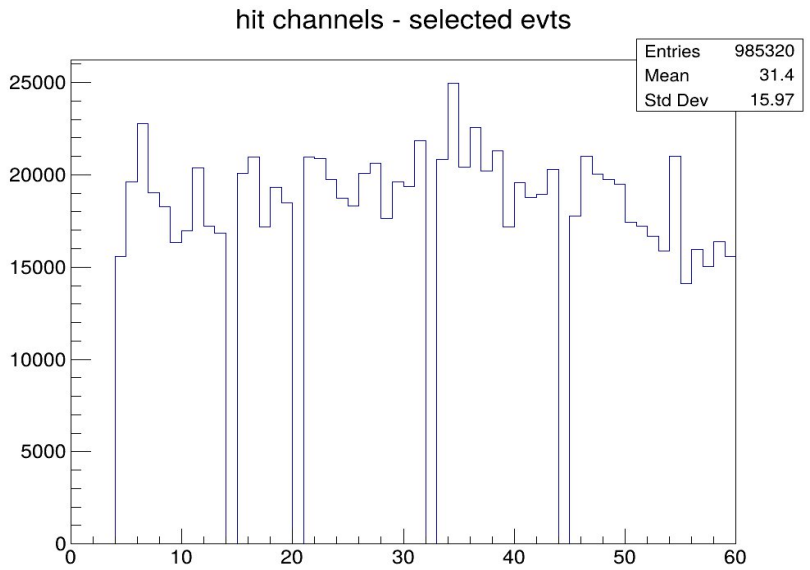
Run 84 (protons Ek=900 MeV, 1mV/fC) - good agreement with simulation

Event selection using Mu2e channels information:

- only one hit in Sci channel,
- at least one hit at MM channel,
- no double hits
- only channels with grayDecoded difference between 0 and 22 remain
- anomalies are excluded

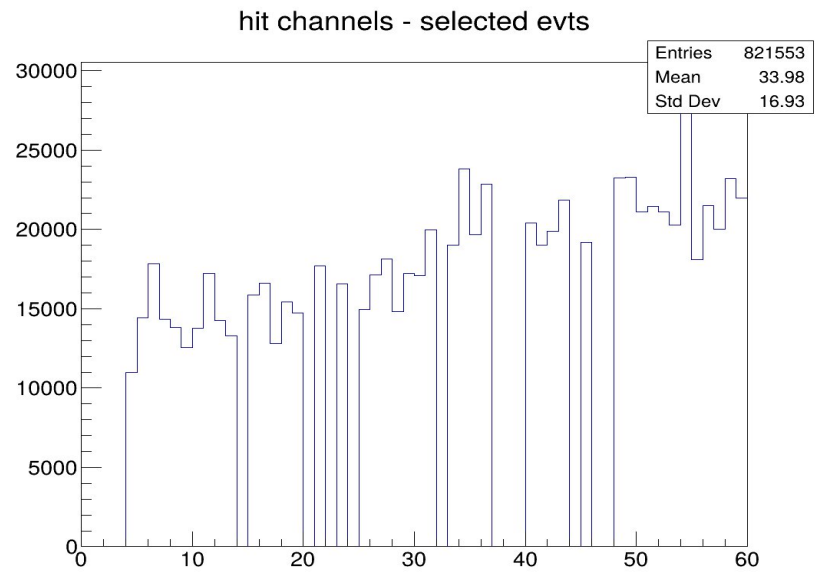
run 53
Ek=100 MeV

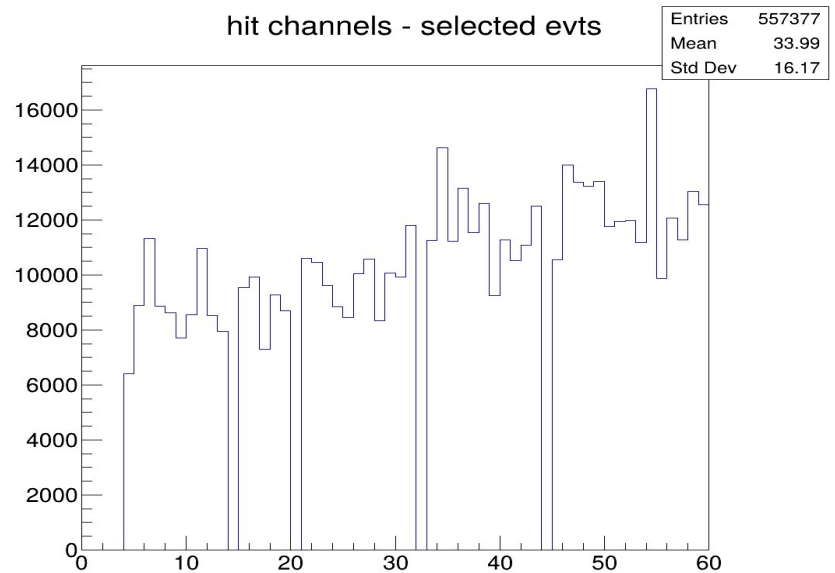




run 64
Ek=200 MeV

run 5
Ek=300 MeV

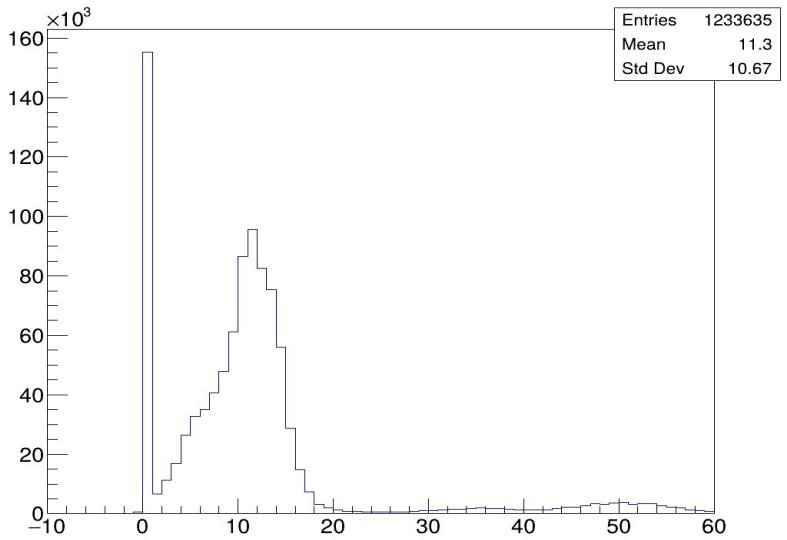


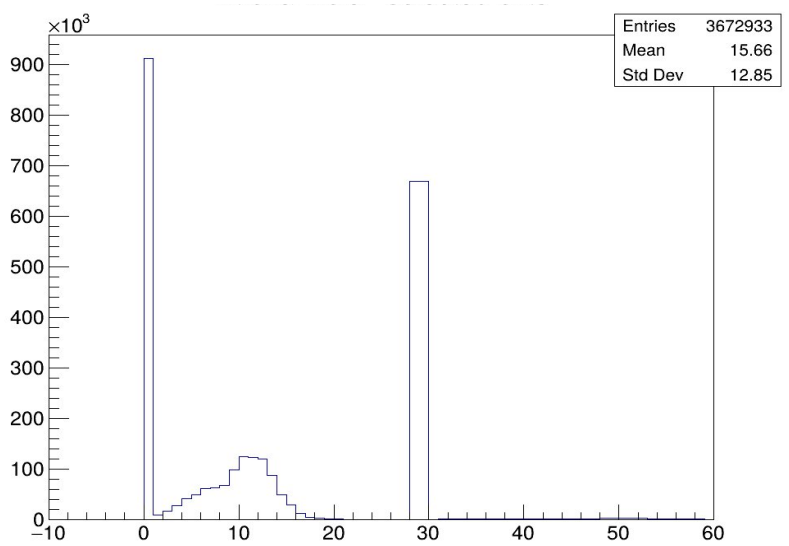


run 67
Ek=400 MeV

Mu2e : GrayDecoded difference distributions

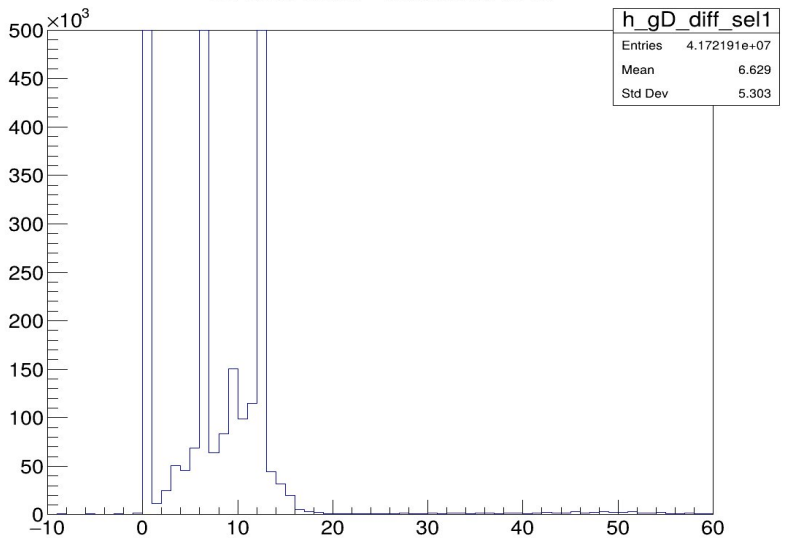
run 53
Ek=100 MeV

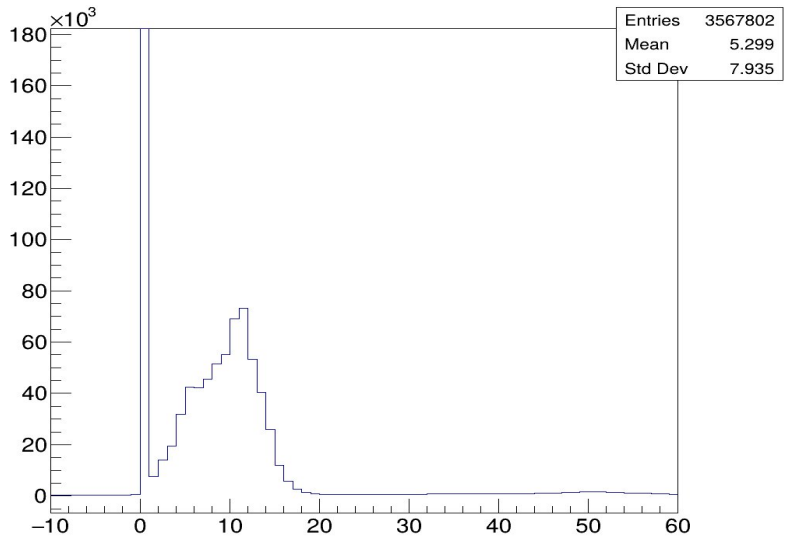




run 64
Ek=200 MeV

run 5
Ek=300 MeV

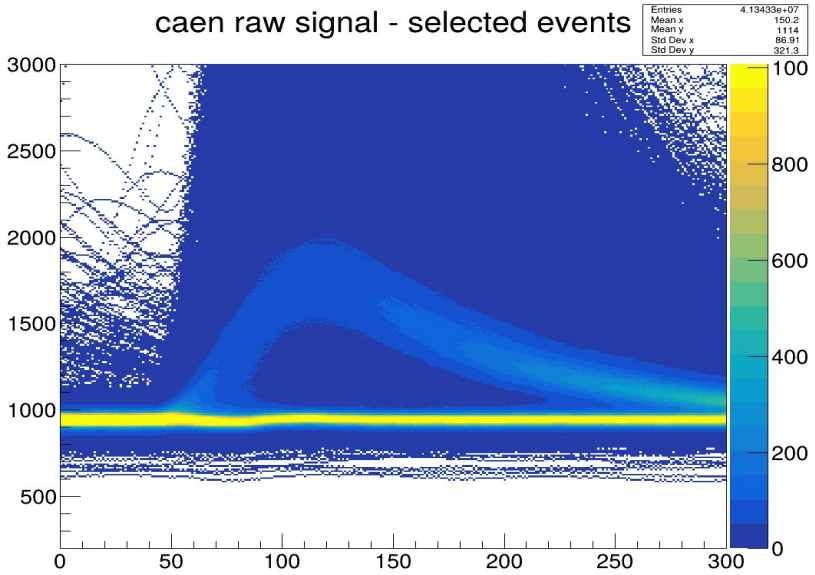




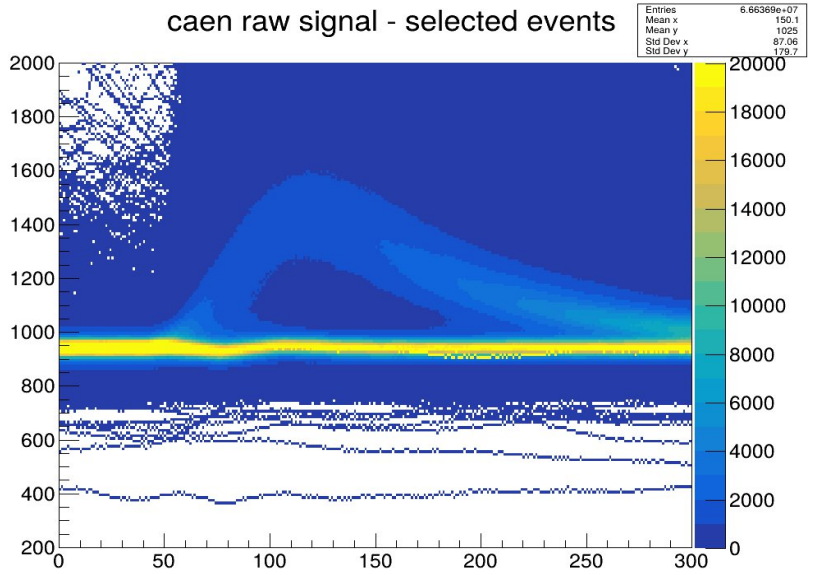
run 67
Ek=400 MeV

CAEN waveforms distributions

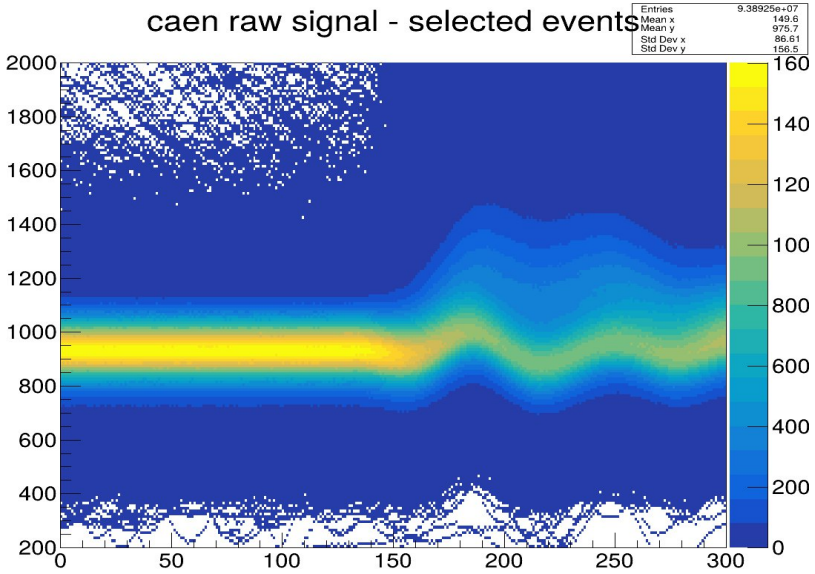
run 53
Ek=100 MeV



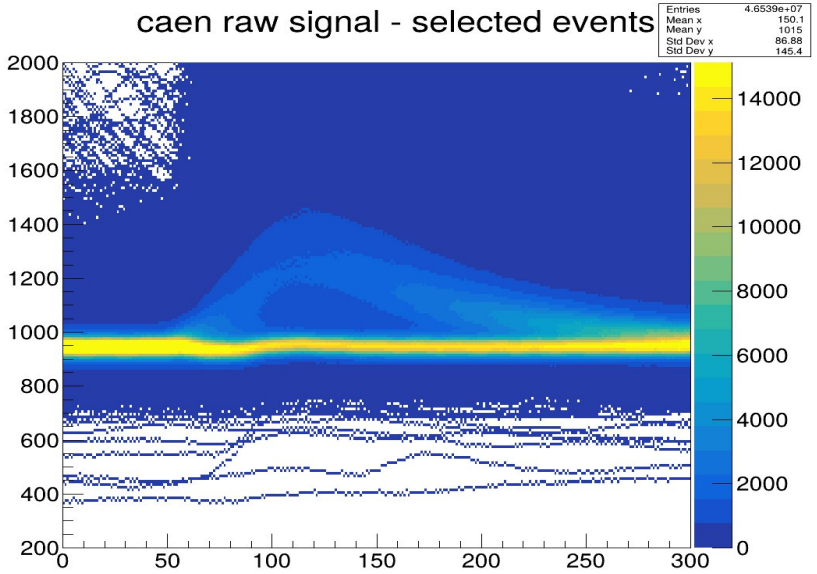
run 64
Ek=200 MeV



run 5
Ek=300 MeV

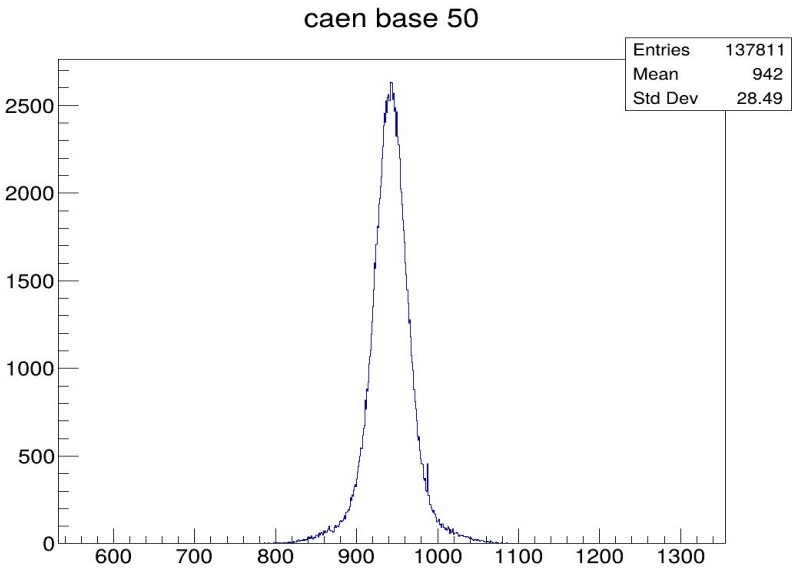


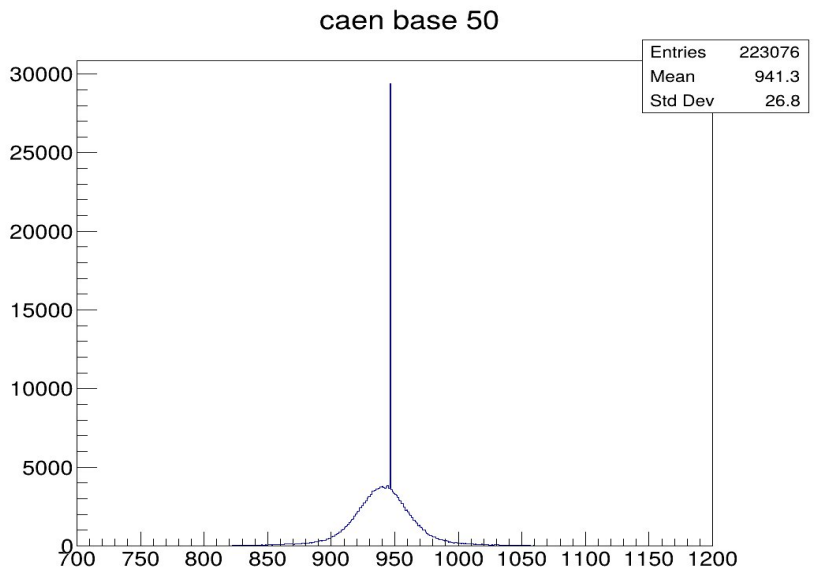
run 67
Ek=400 MeV



CAEN : baseline (50 samples)

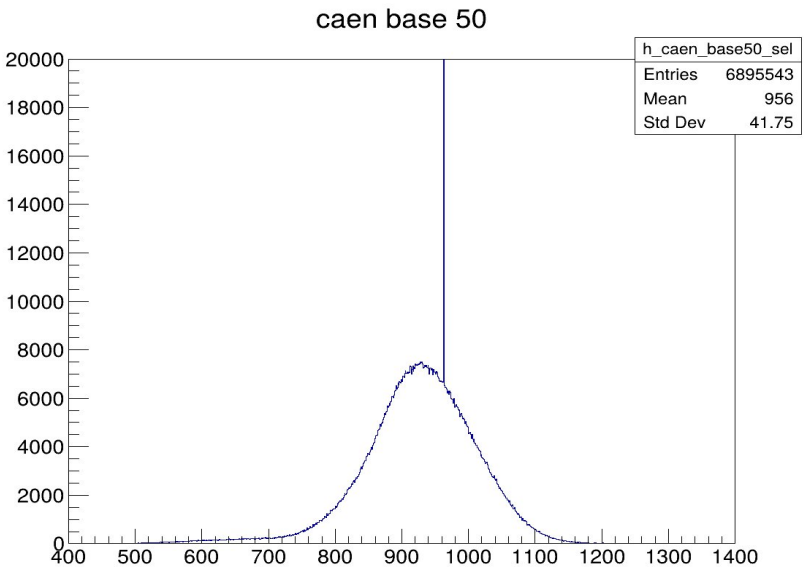
run 53
Ek=100 MeV

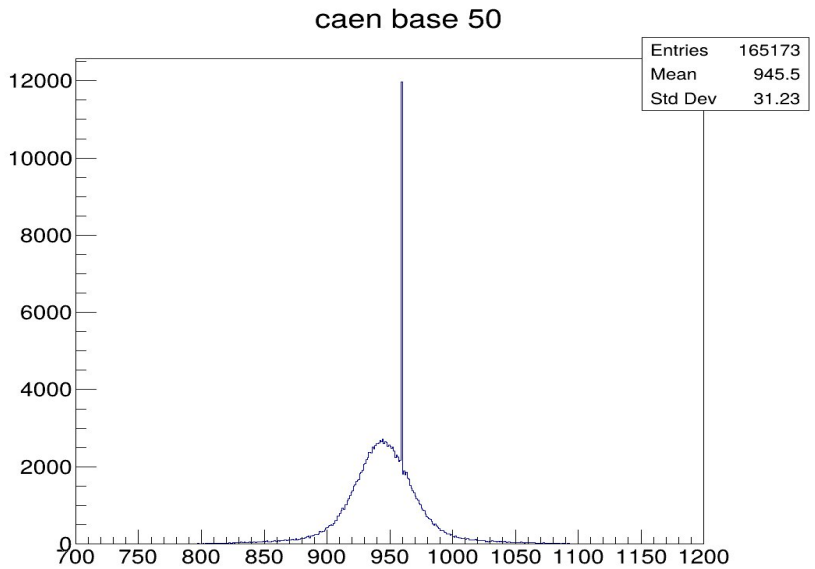




run 64
Ek=200 MeV

run 5
Ek=300 MeV

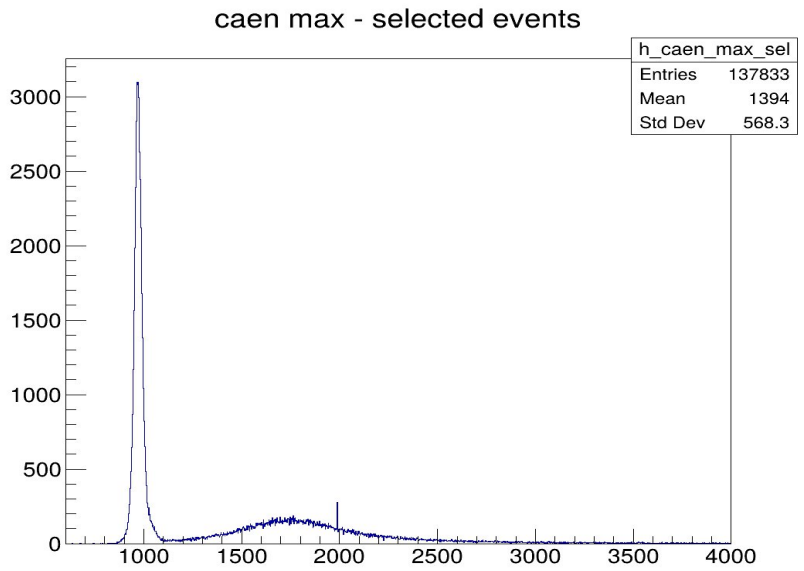


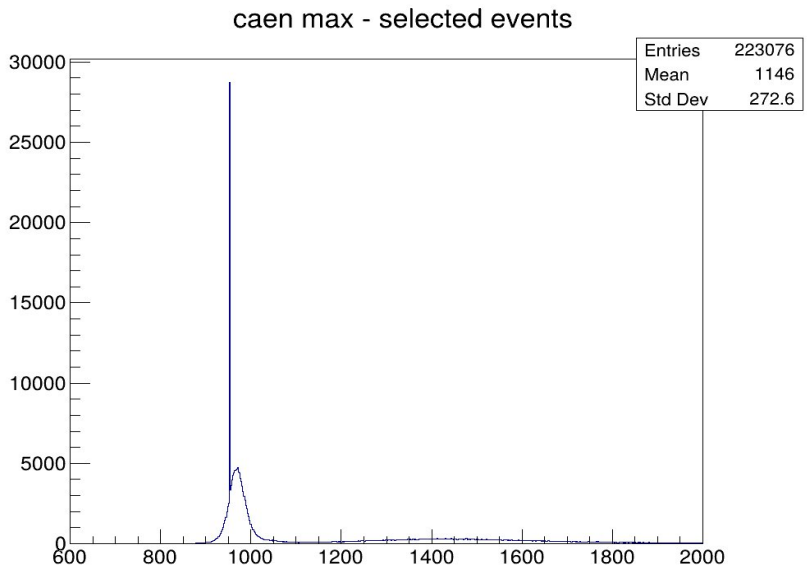


run 67
Ek=400 MeV

CAEN : max over baseline

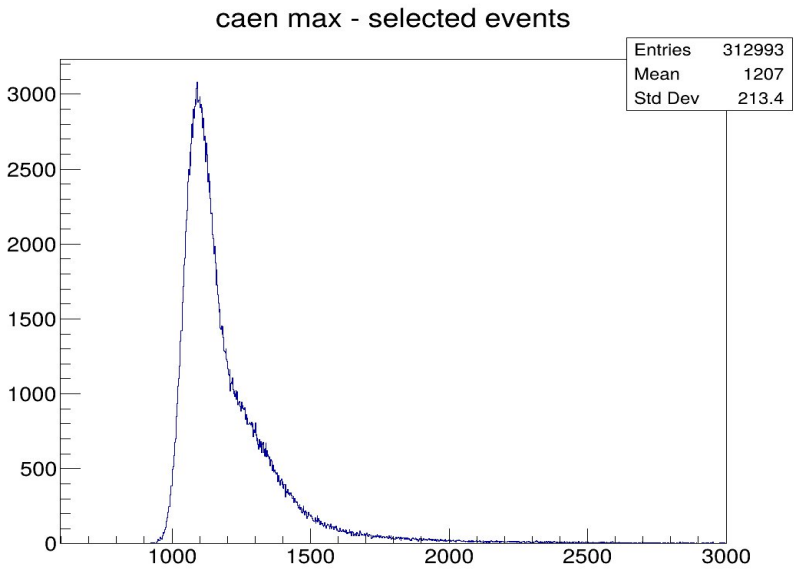
run 53
Ek=100 MeV

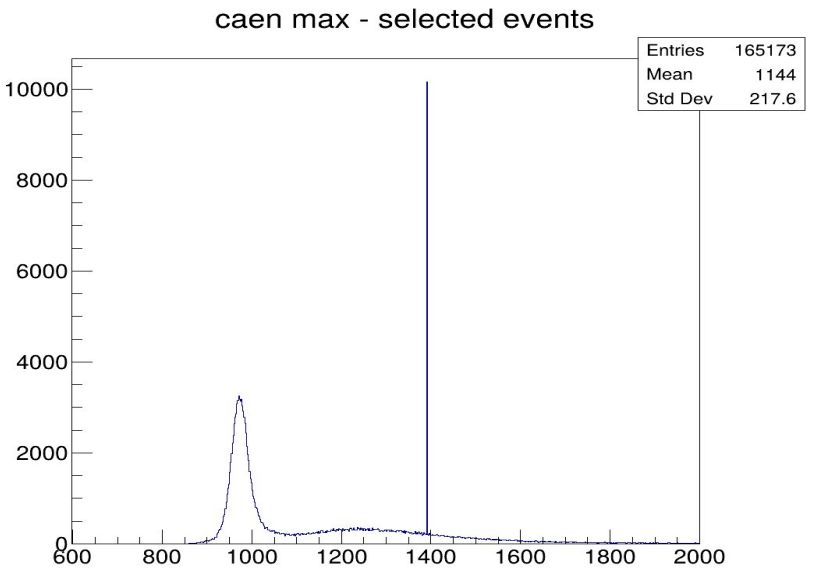




run 64
Ek=200 MeV

run 5
Ek=300 MeV

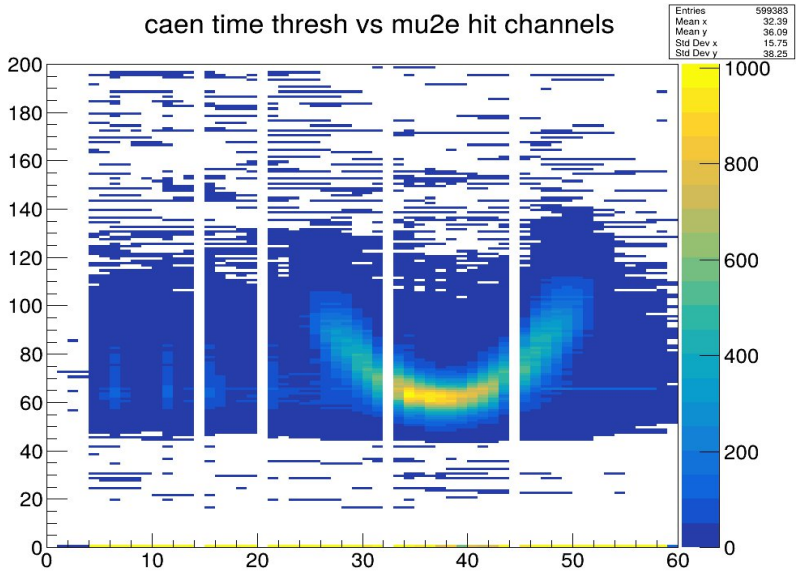




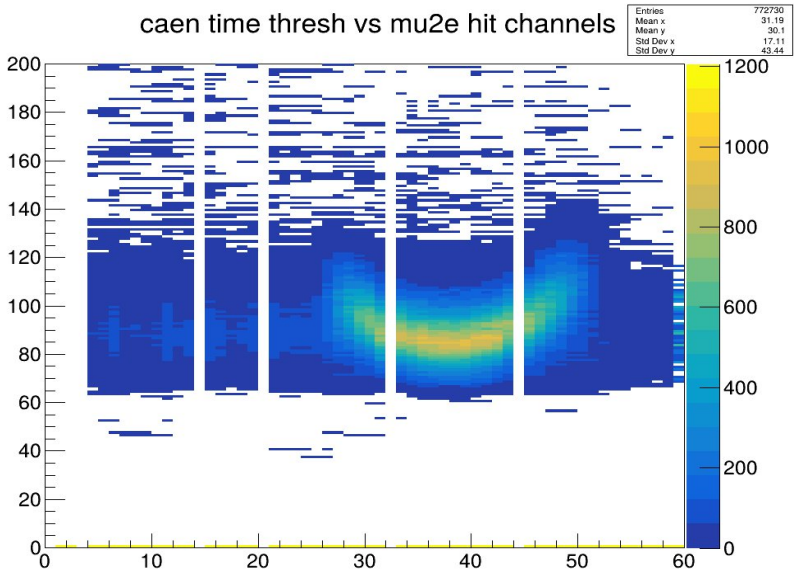
run 67
Ek=400 MeV

CAEN max above threshold vs Mu2e hit channels

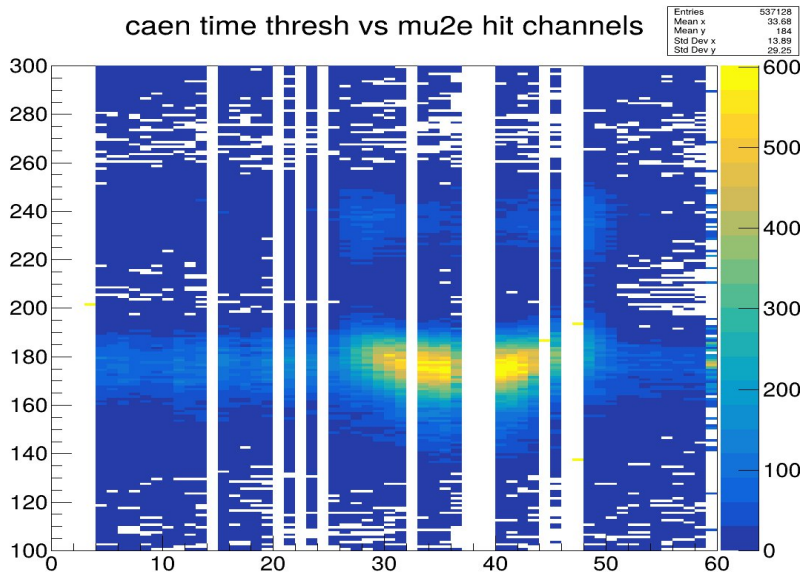
run 53
Ek=100 MeV



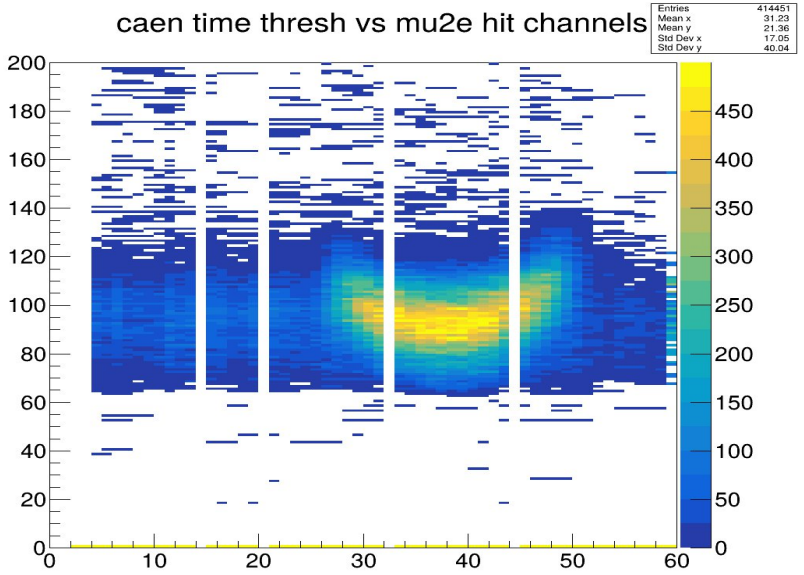
run 64
Ek=200 MeV



run 5
Ek=300 MeV

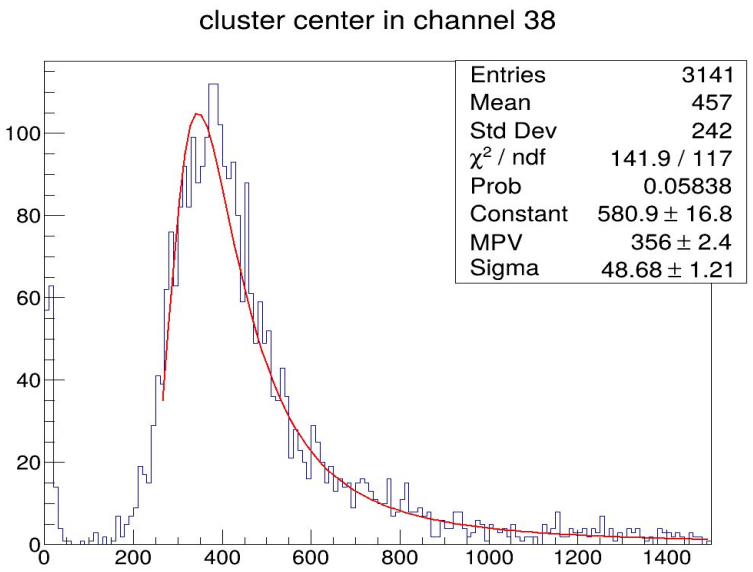


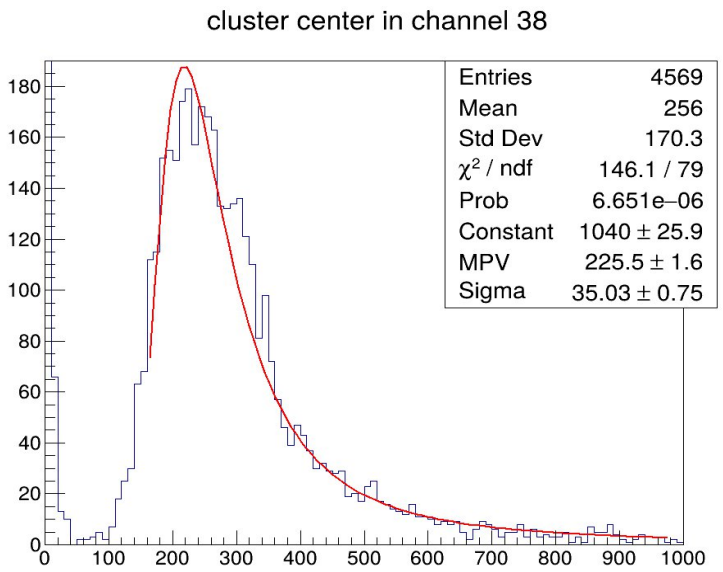
run 67
Ek=400 MeV



Waveform maxima distribution in channels 38(40) (~0.2 mm from the wire) in fC

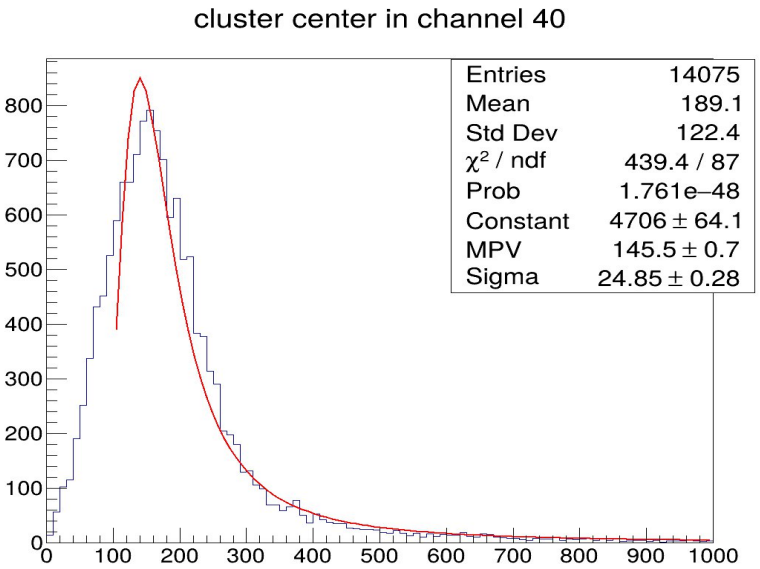
run 53
Ek=100 MeV

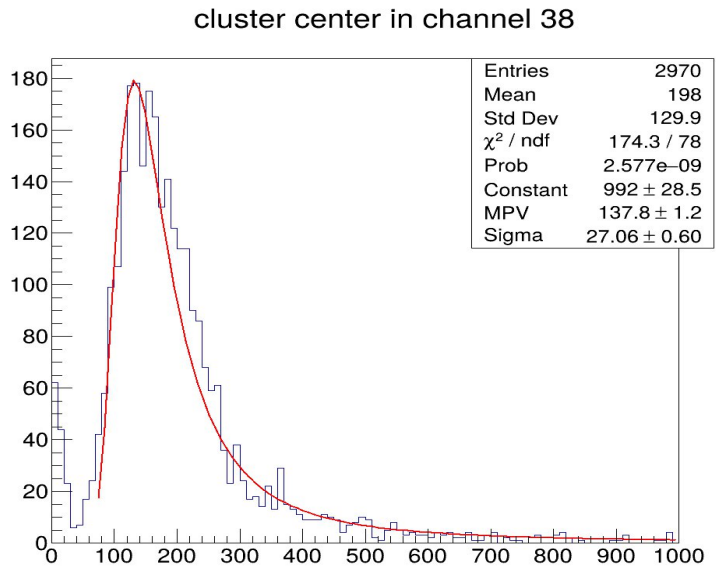




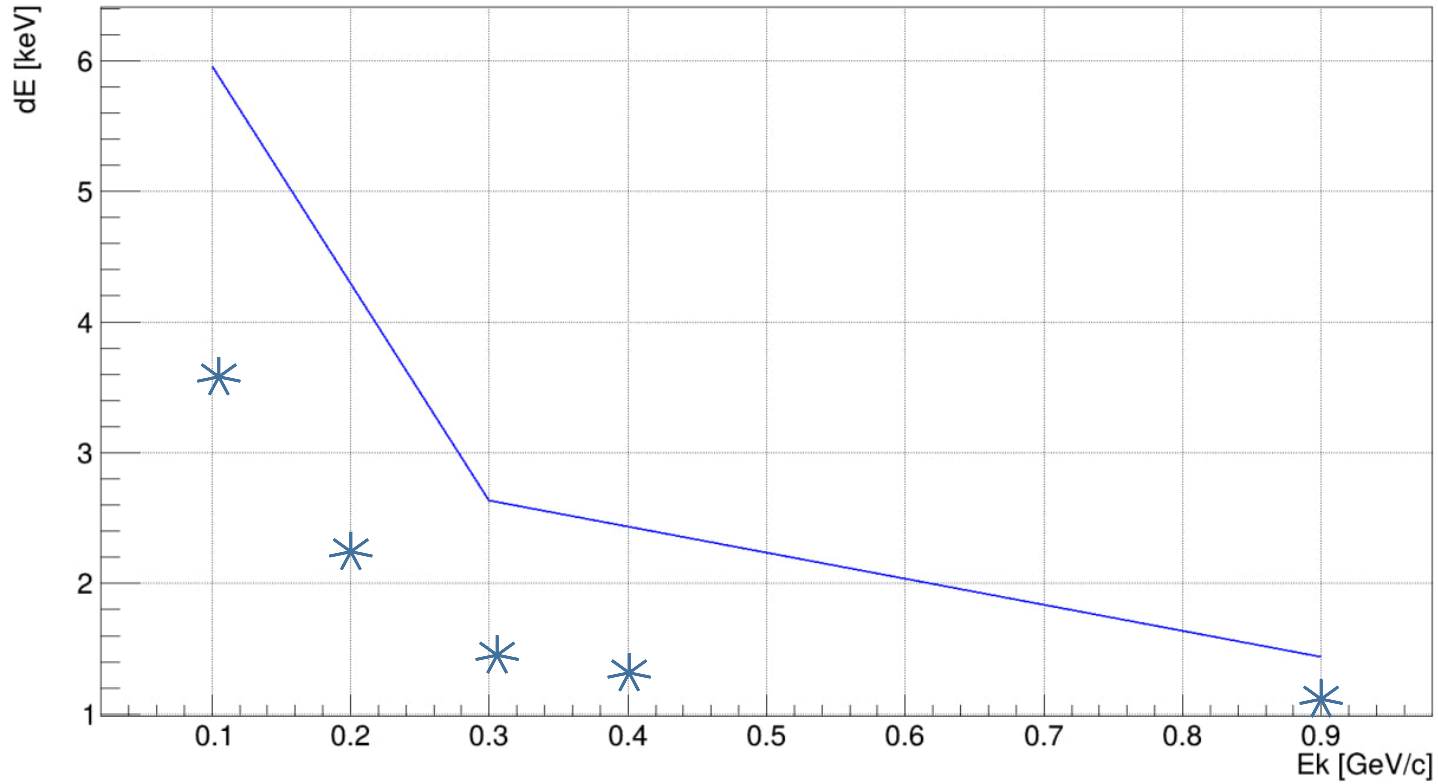
run 64
Ek=200 MeV

run 5
Ek=300 MeV





run 67
Ek=400 MeV


dE [keV]
6
5
4
3
2
1
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
Ek [GeV/c]