Beam Time Report and Online Analysis

AlCap Collaboration Meeting

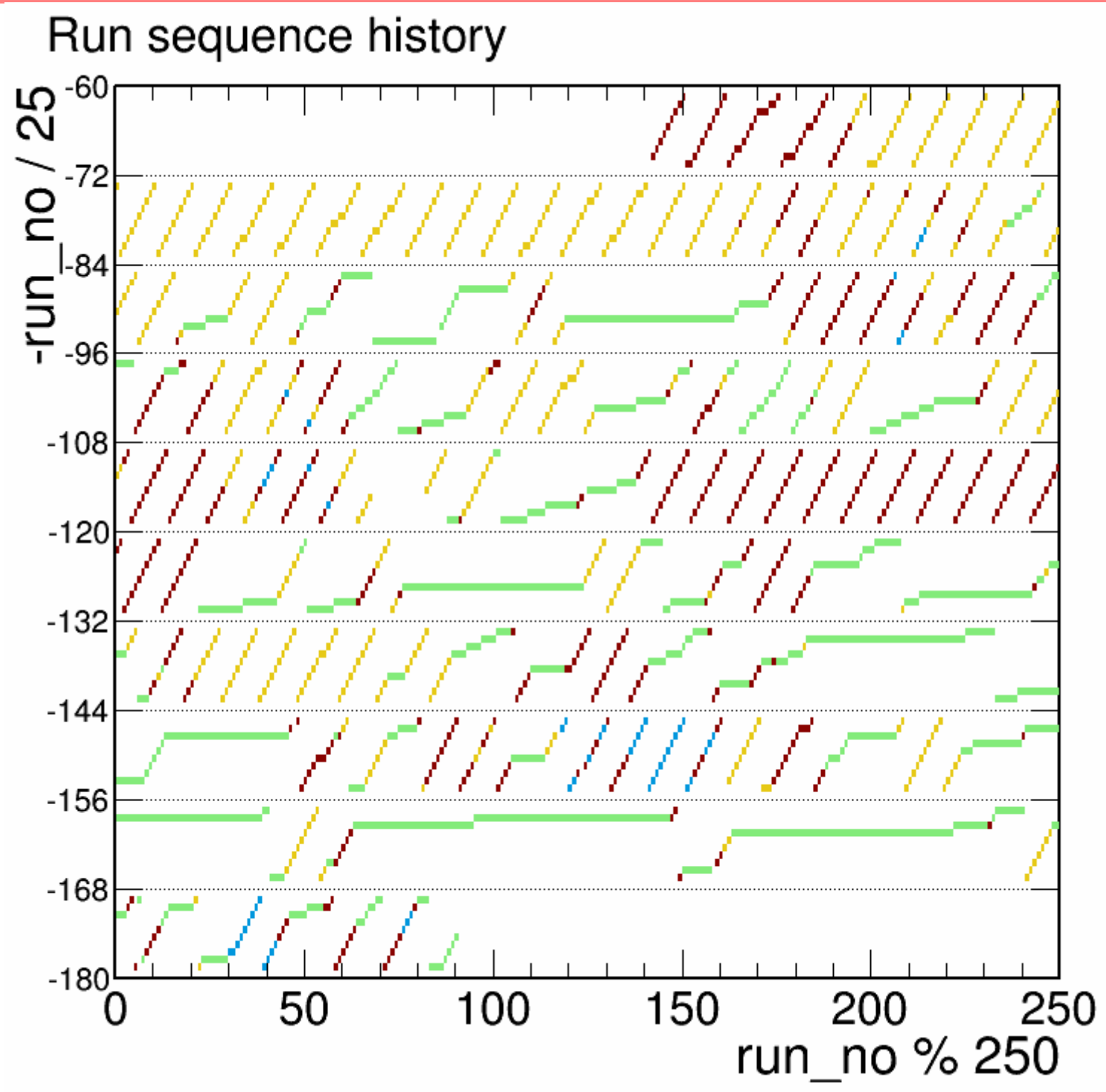
Outline

- Beam Time Report
  - How it was compiled
  - Visual summary
- Online Analysis
  - Examples of some of the plots we produced while at PSI

Beam Time Report

- On Dropbox
- Compiled as follows:
  - elog ordered
    - went through and summarised the relevant elogs, noting any run numbers that are mentioned
  - run number ordered
    - went through the elogs again, in conjunction with the run info DB to account for as many run numbers as possible
  - Changes to DB
    - Phill will talk about

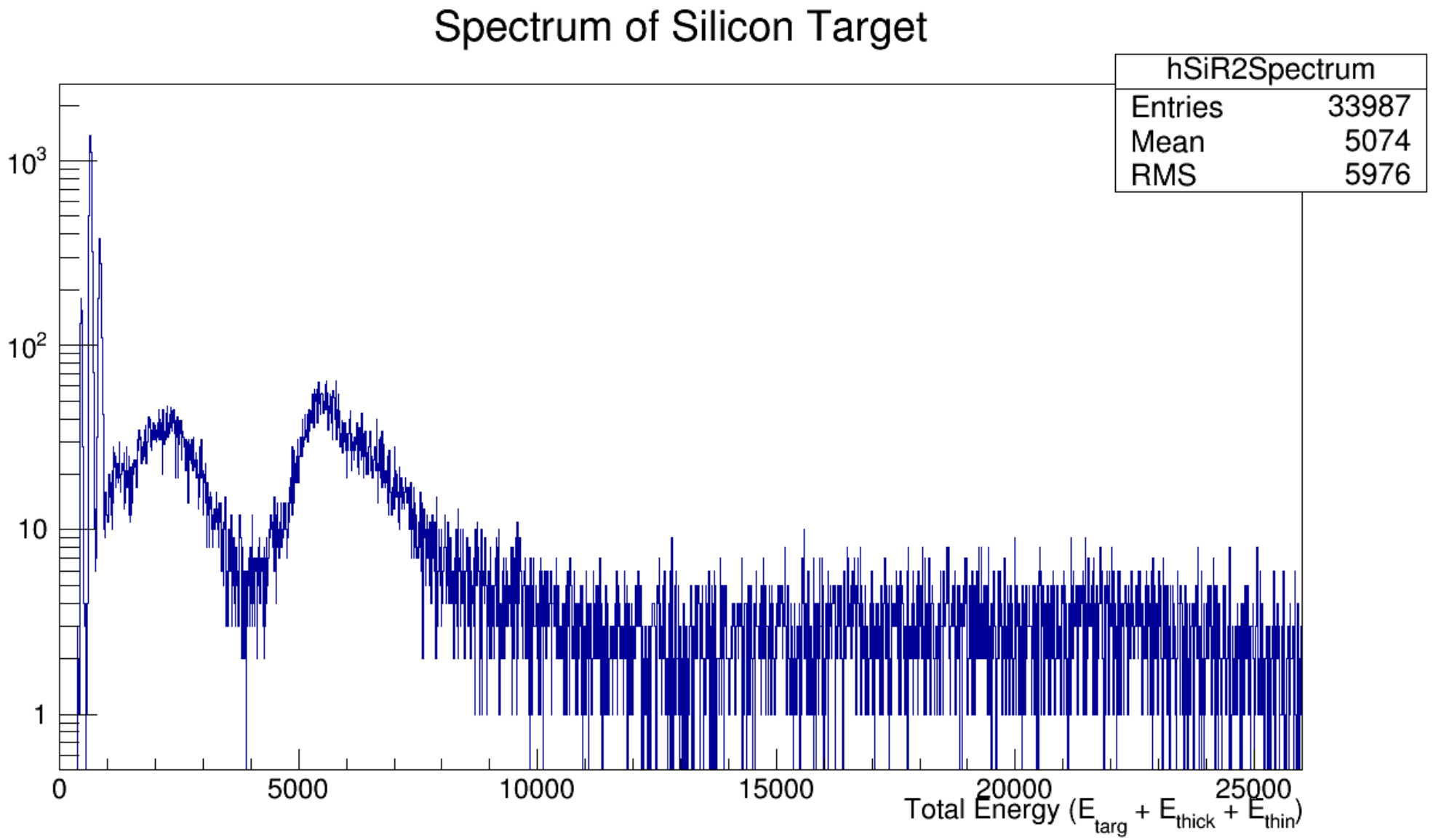
- Different colours indicate different data qualities
- If a run seemed to be autostarted it is plotted on the same level
- Long, green runs appear later in the run



Online Analysis

- Online we:
  - produced (very) rough proton and muonic x-ray spectra for Si
  - saw odd structure in CAEN digitisers
  - saw punch-through muons during momentum sweeps
  - produced rough dE/dx plots
  - saw that Ge-S has a large time difference with muSc (~42 us)
- We learned that
  - there is a common trigger on the Ge detectors (UH CAEN)
  - there is a negative Ge reset pulse

Silicon Spectra (elog:693)



Silicon Spectra (elog:693)

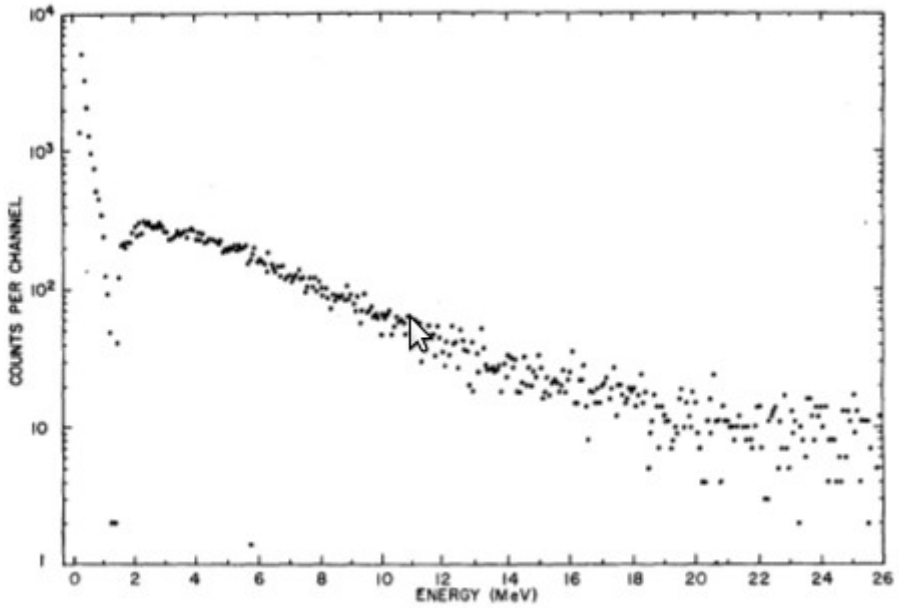
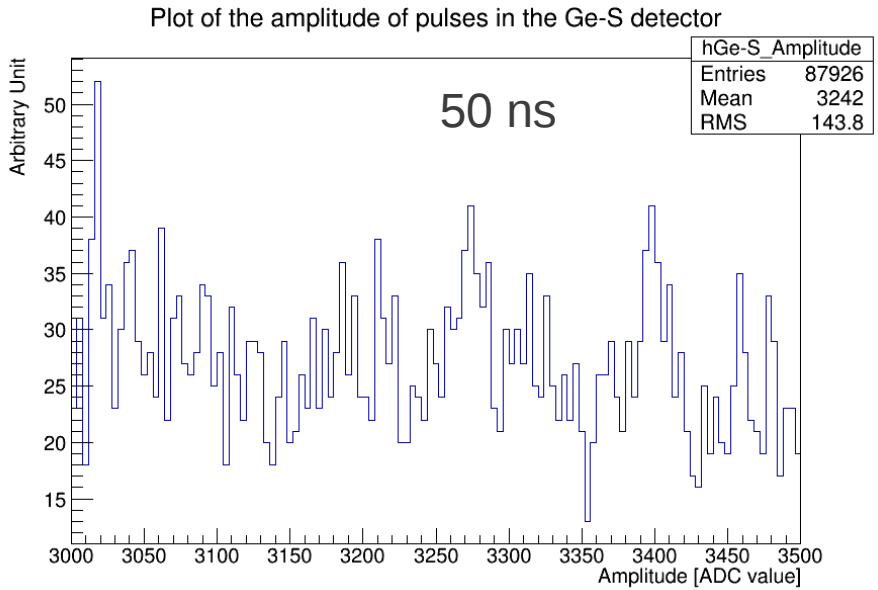
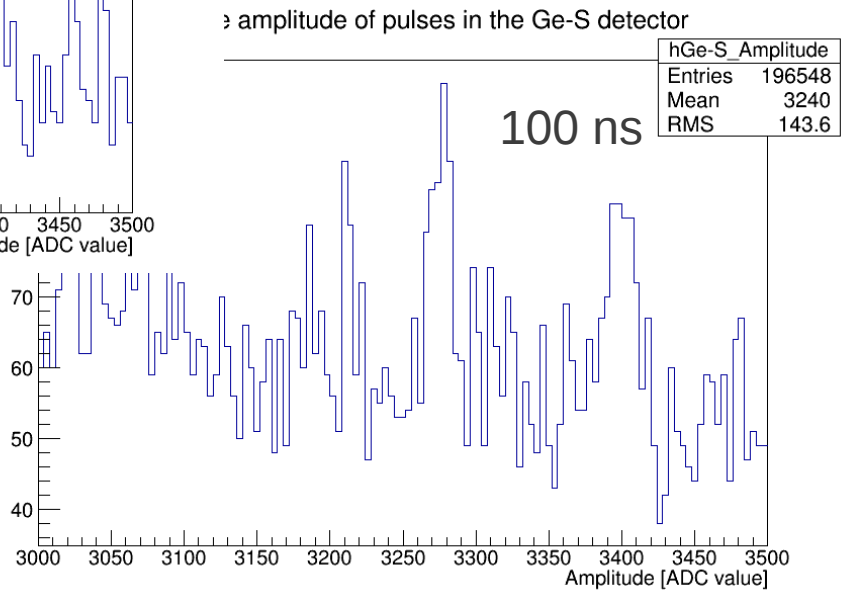


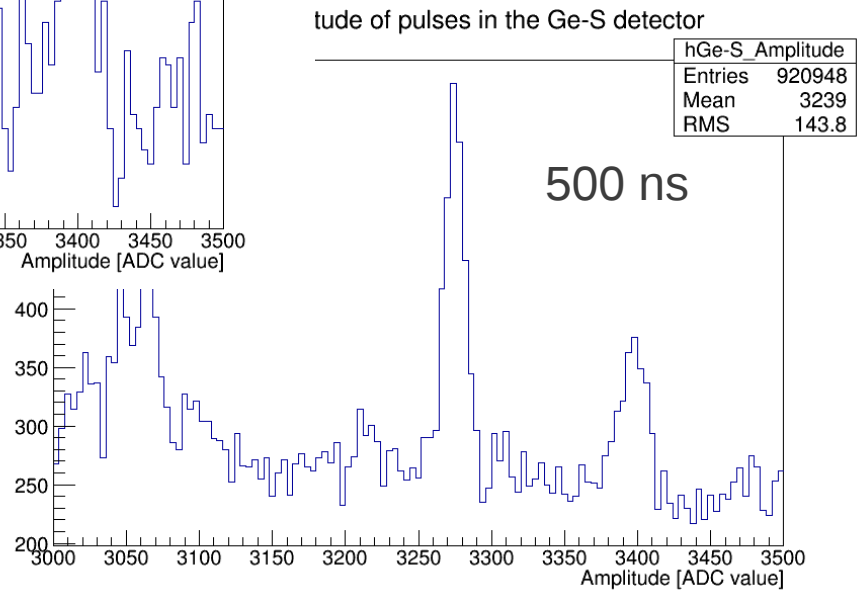
FIG. 3. Data after subtraction of muon-decay electron background and correction for escape of protons.

hSiR2Spectrum	
ntries	33987
lean	5074
MS	5976

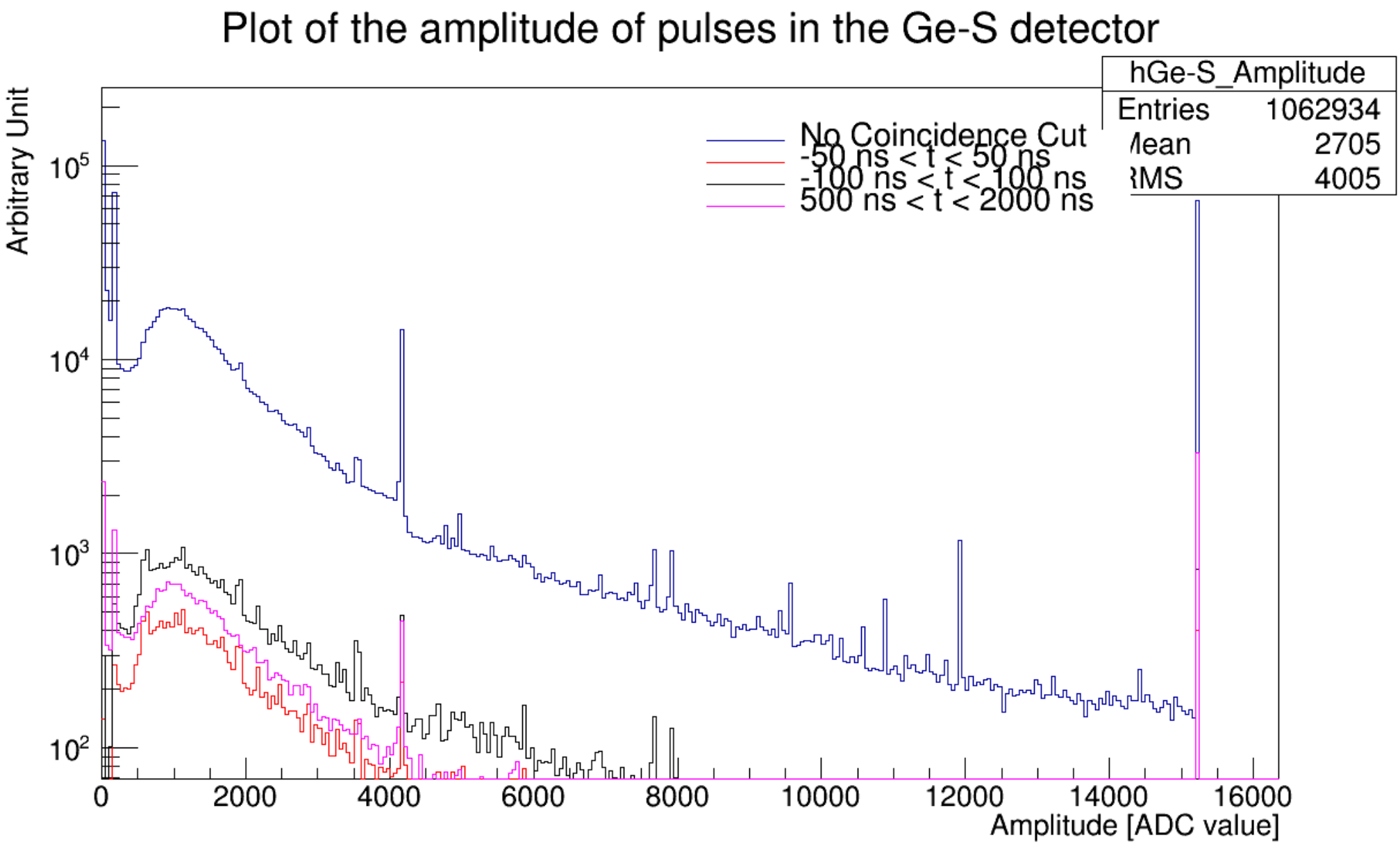
Si Muonic X-Ray Spectra (elog:679)



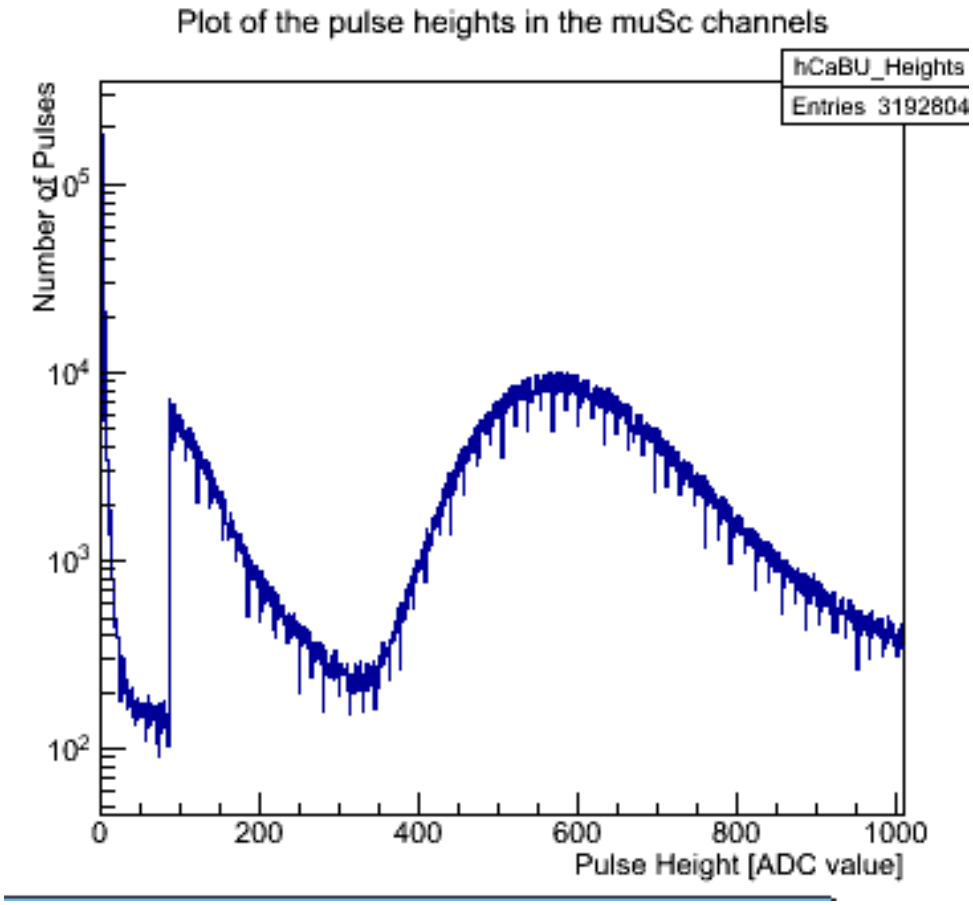




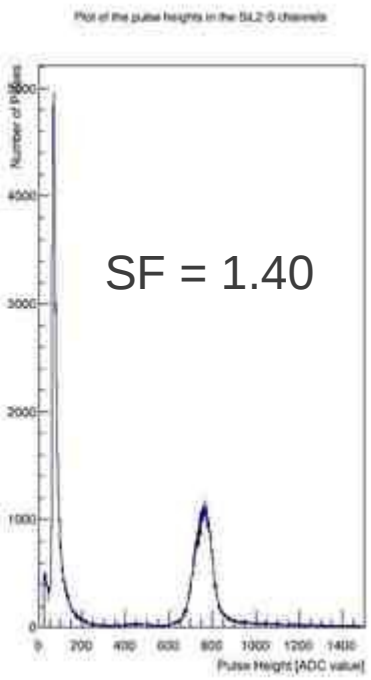
Muonic X-Ray Spectra (elog:520)

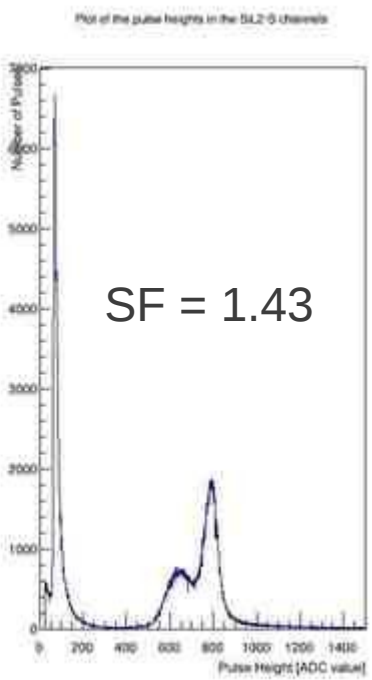


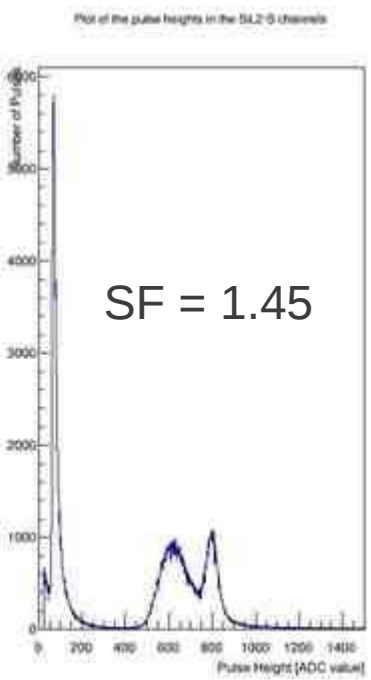
Odd Structure in CAEN Digitisers (elog:375)

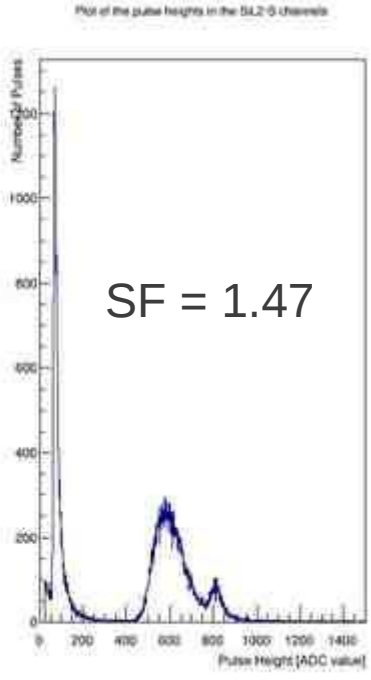


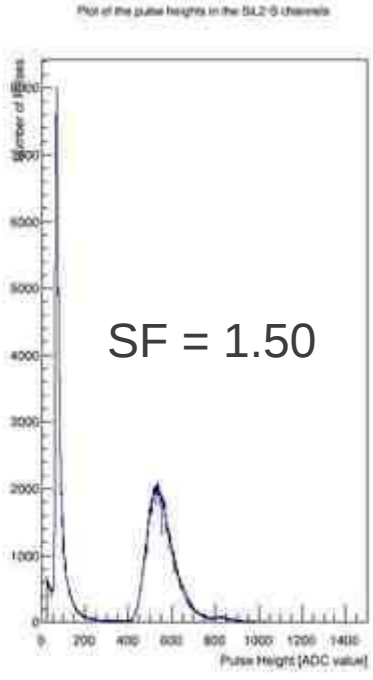
Punch-through Muons (elog:274)



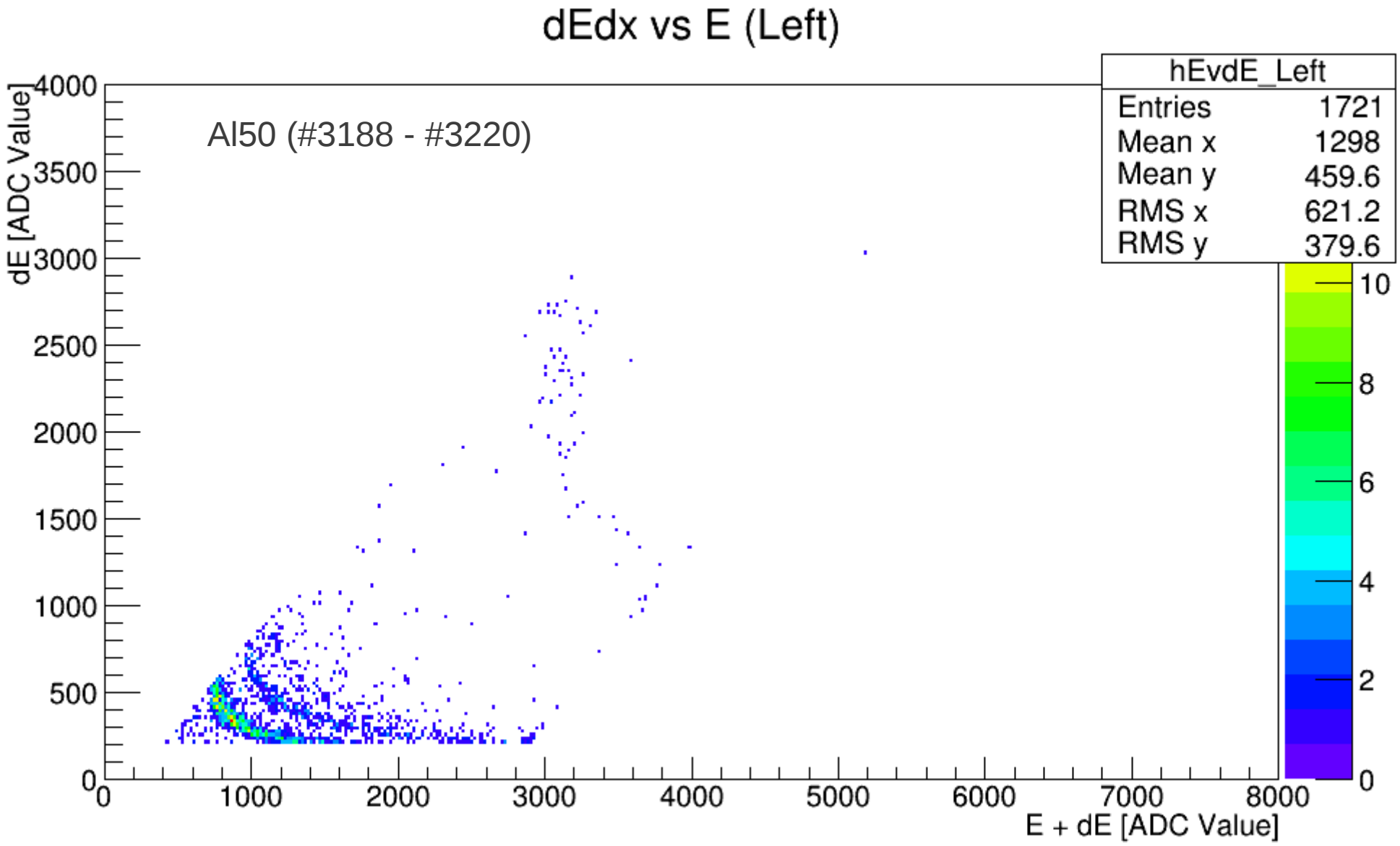




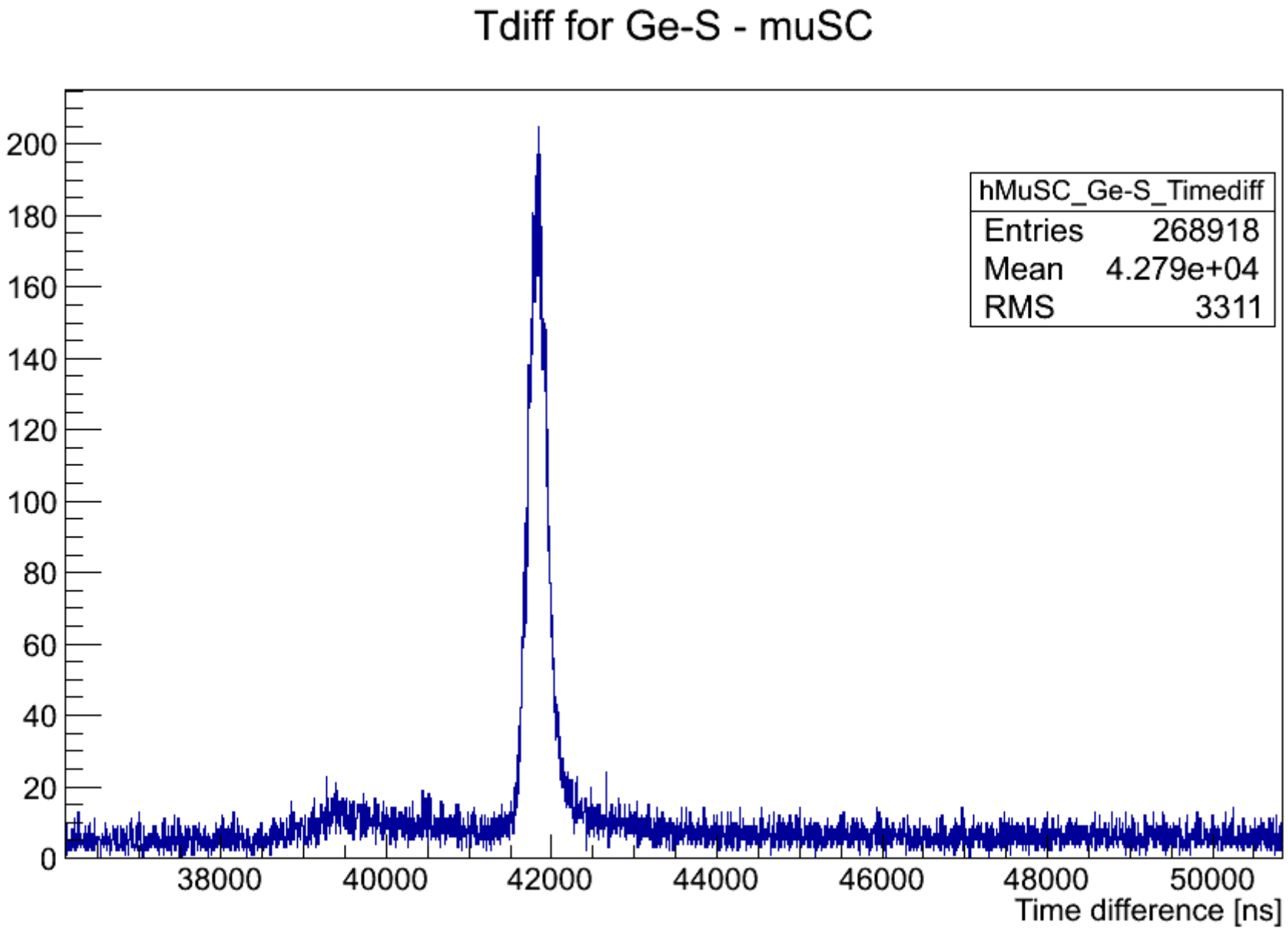




dE / dx Plots (elog:643)



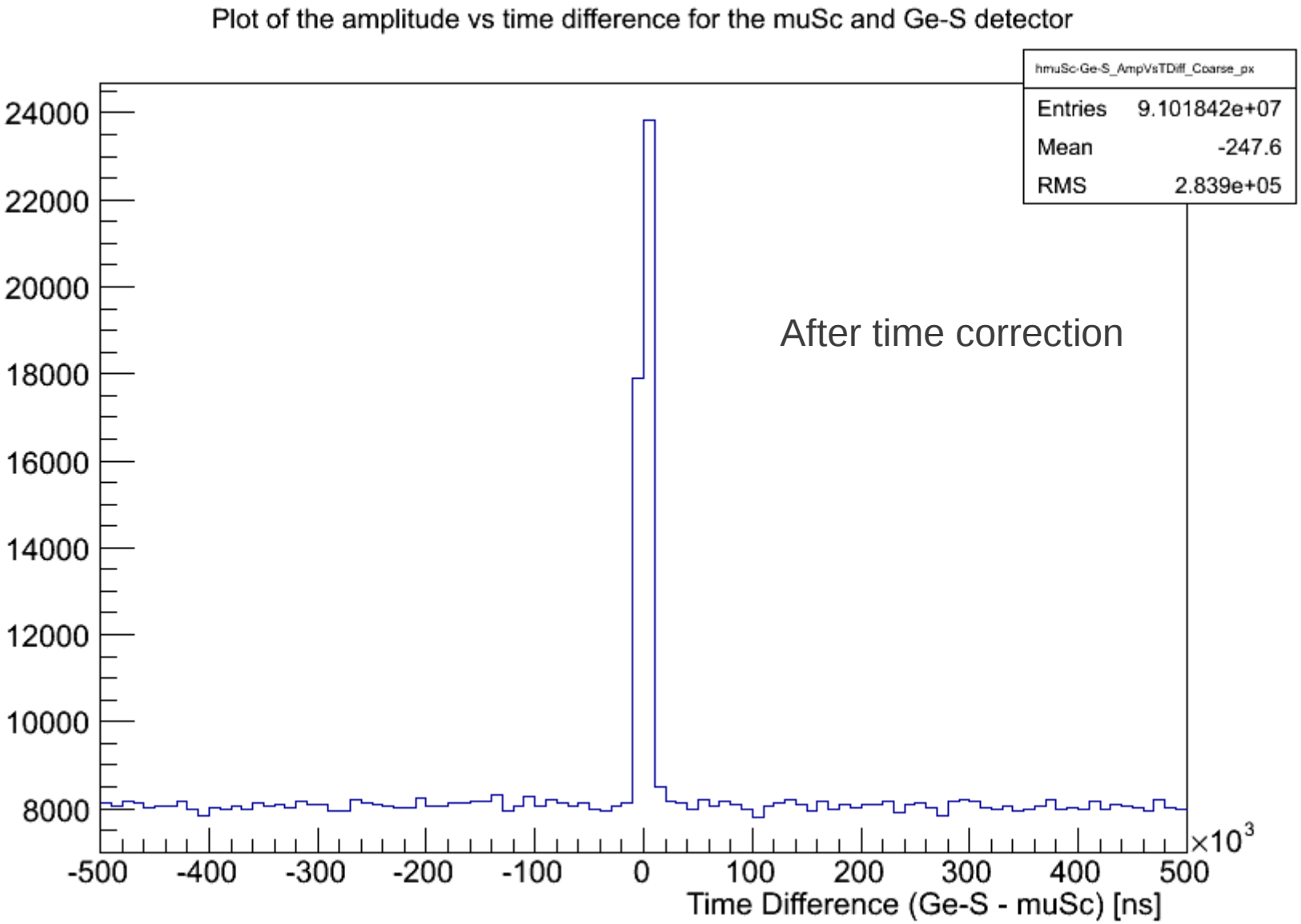
Large Ge-S – muSC TDiff (elog:384)



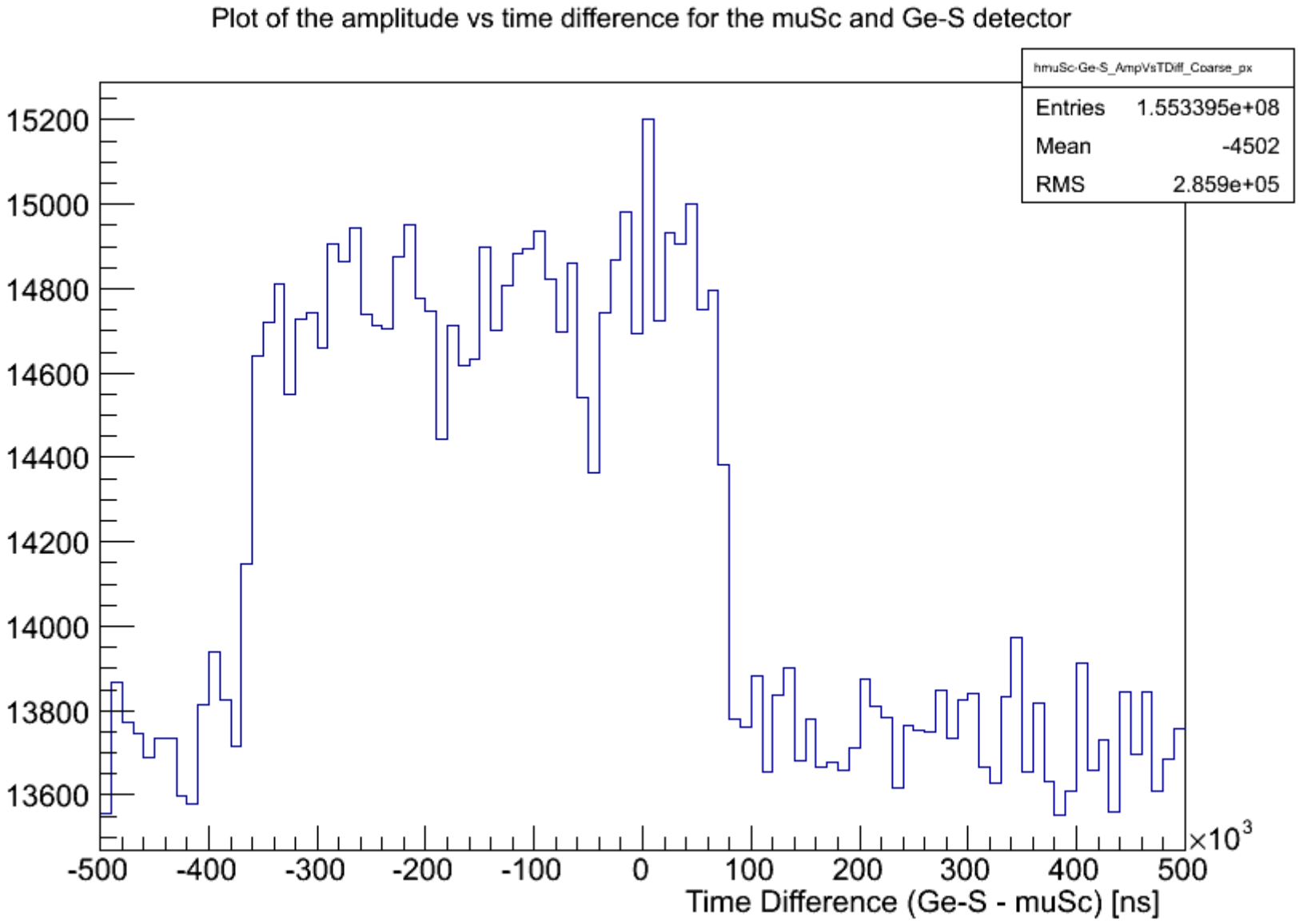
Ge-S – muSc Correlation

- Tried to reproduce this with run 2076 (SiR)
  - Couldn't
- Tried run 2600 (Al100)
  - Could
- Spent some time trying to solve the problem but couldn't work it out

Run 2600 (Al100 run)



Run 2076 (SiR run)



Discussion Points

- Is there anything else we did / learned?
- How do we communicate problems we find with runs?
- How long do we spend trying to solve problems before deciding to throw the run away?