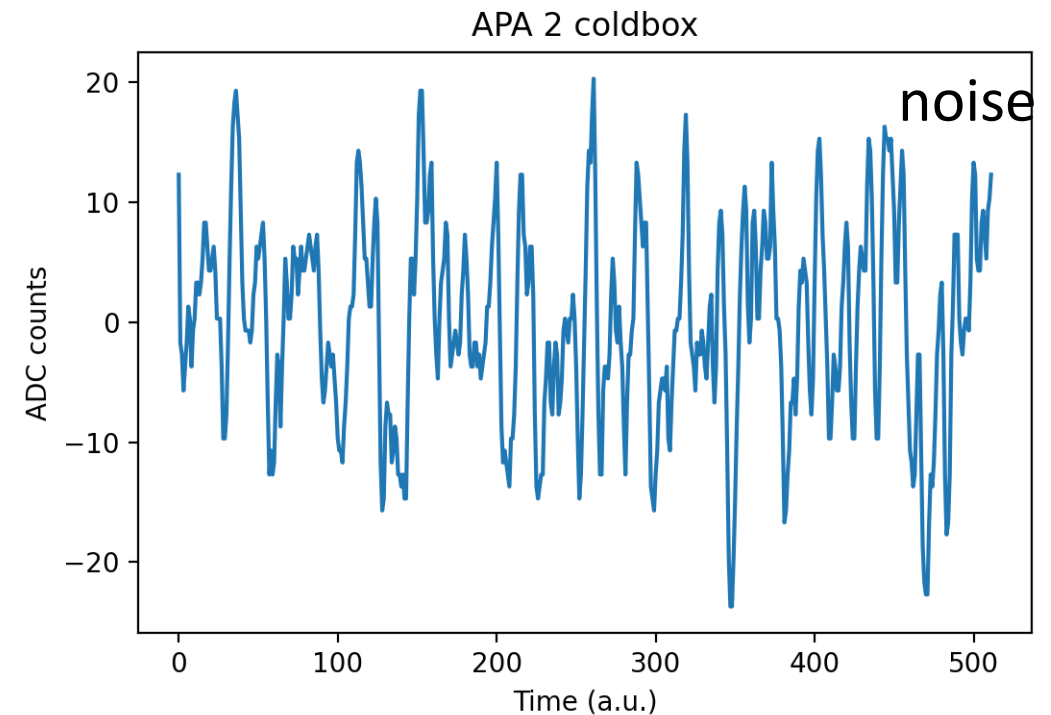
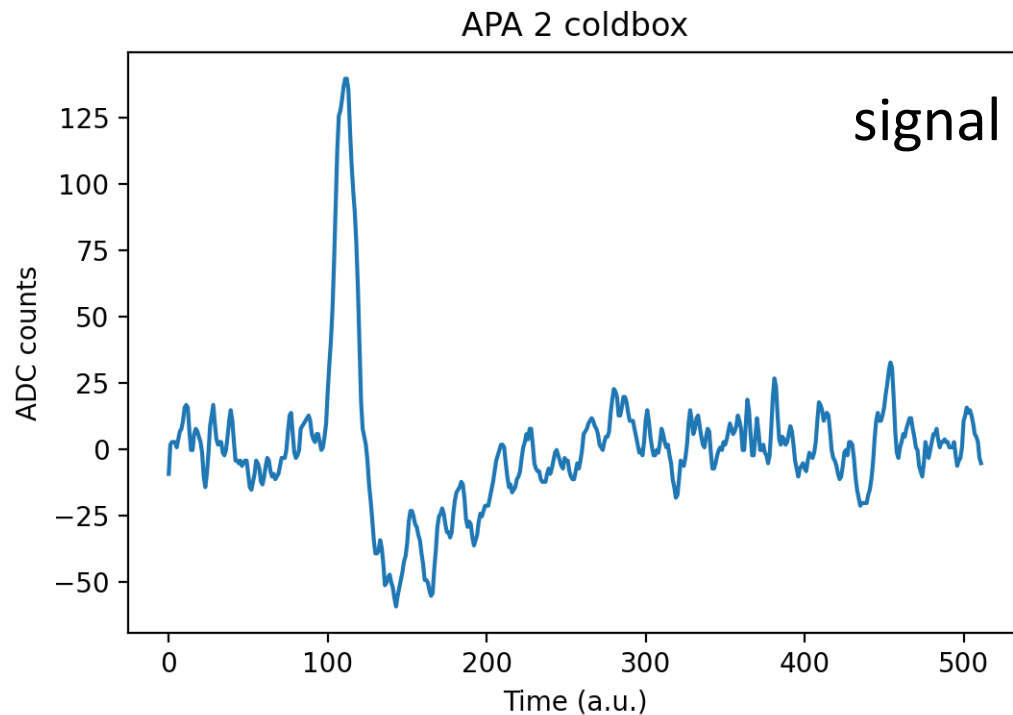


# APA Coldbox test PDS data analysis

- ~5000 waveforms recorded with the PD modules of APA in coldbox
- Charge inside each waveform is estimated for SNR calculation

Signal Noise  
Ratio



# APA Coldbox test PDS data analysis

This means the distance between nearby peaks is constant.

- Multigaussian fit of charge histogram

with:

- $\mu_i = \mu_0 + i * gain$
- $\sigma_i^2 = \sigma_0^2 + \sigma_{cell}^2$
- Signal to Noise ratio (>4 for DUNE):
  - $SNR_0 = G / \sigma_0$
  - $SNR_1 = G / \sigma_{cell}$
  - $SNR_2 = G / \sqrt{\sigma_0^2 + \sigma_{cell}^2}$

