

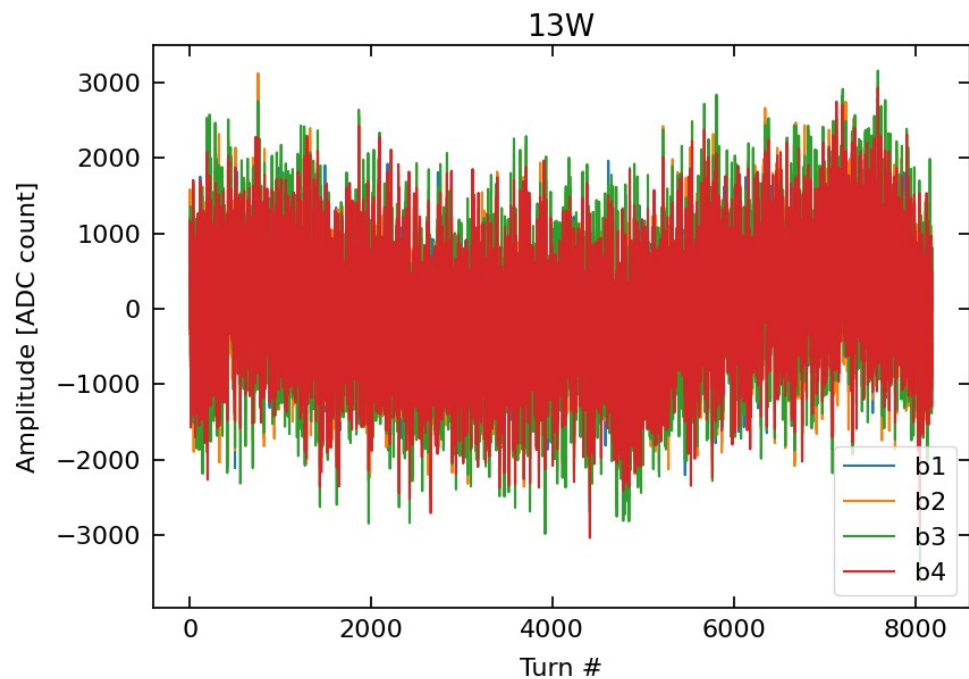
# CBPM sampling clock jitter

Antoine

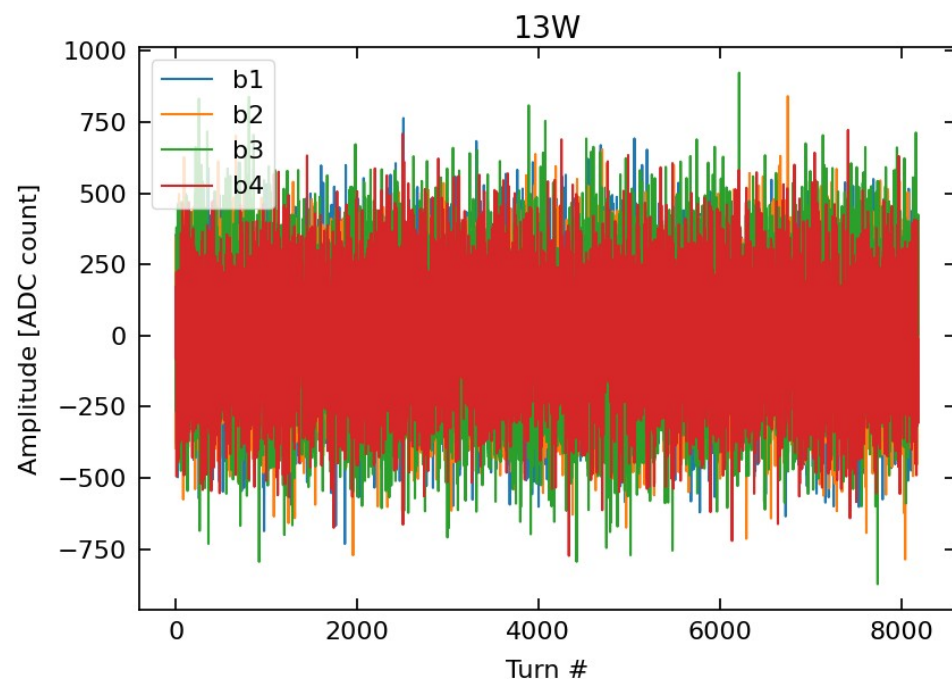
CESR instrumentation meeting – Nov 22<sup>th</sup>, 2024

# recap' Let's get rid of the overall correlation

Subtract from each channel time series the averaged time series of the 4 buttons



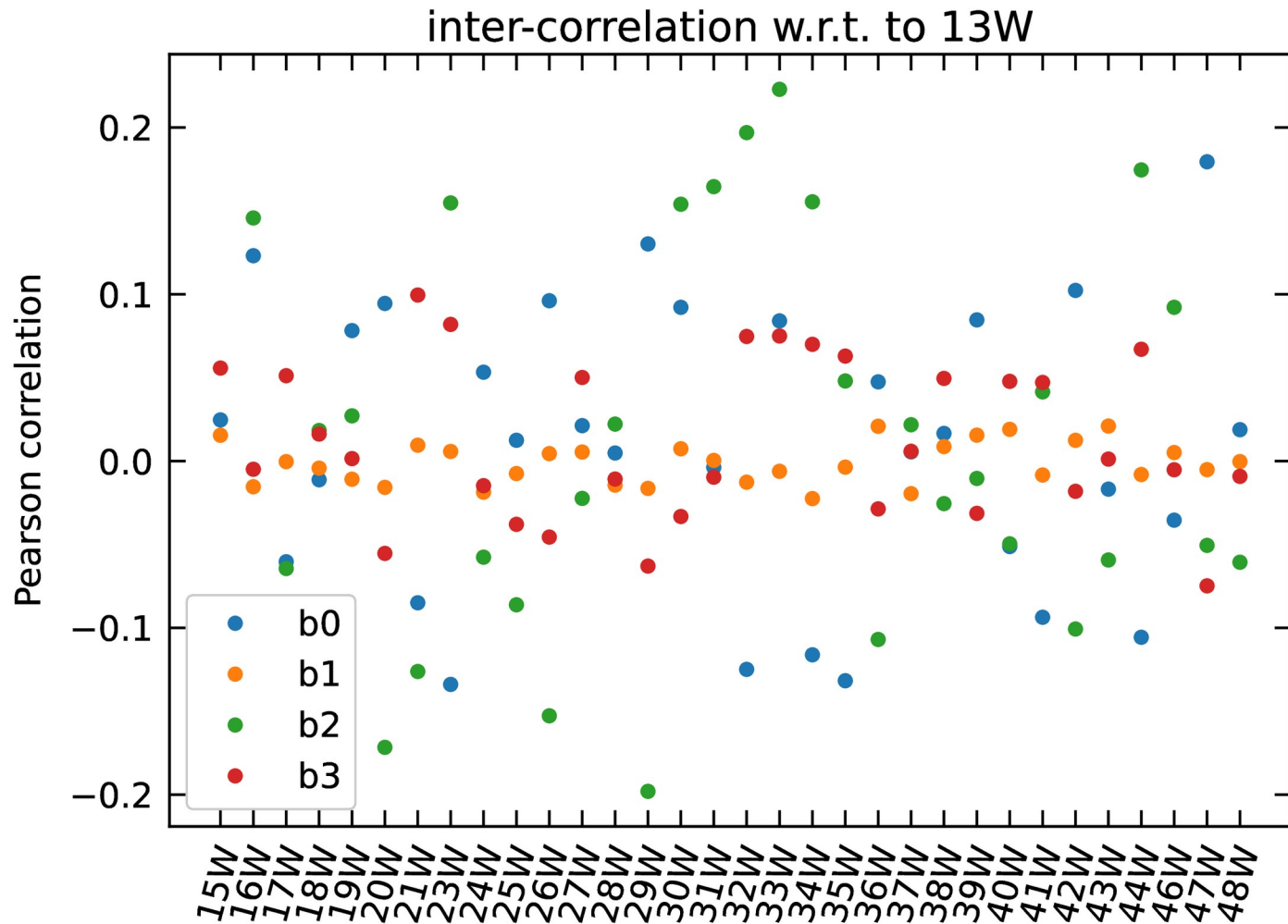
before subtraction



after subtraction

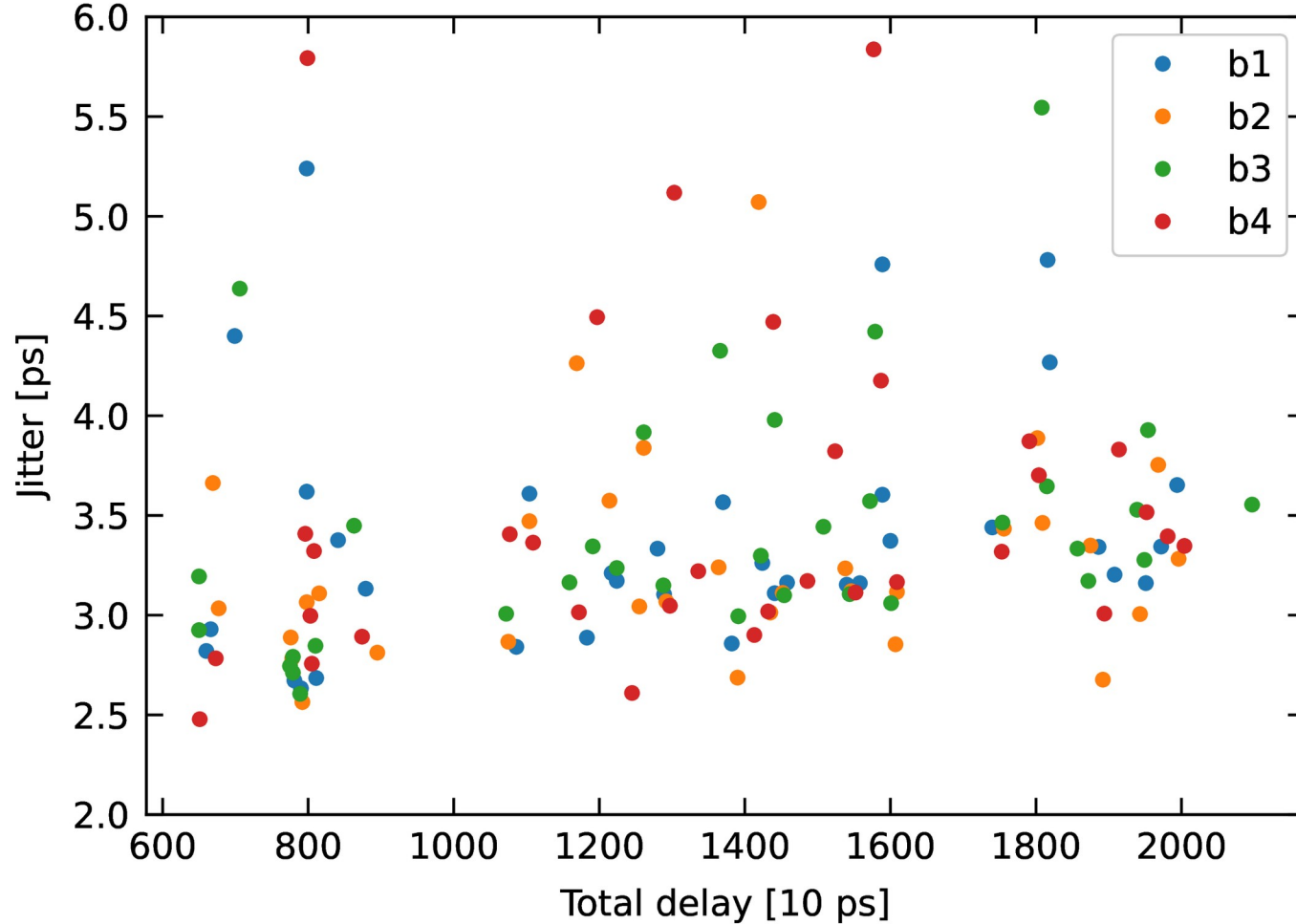
recap'

# Inter-module Pearson correlation



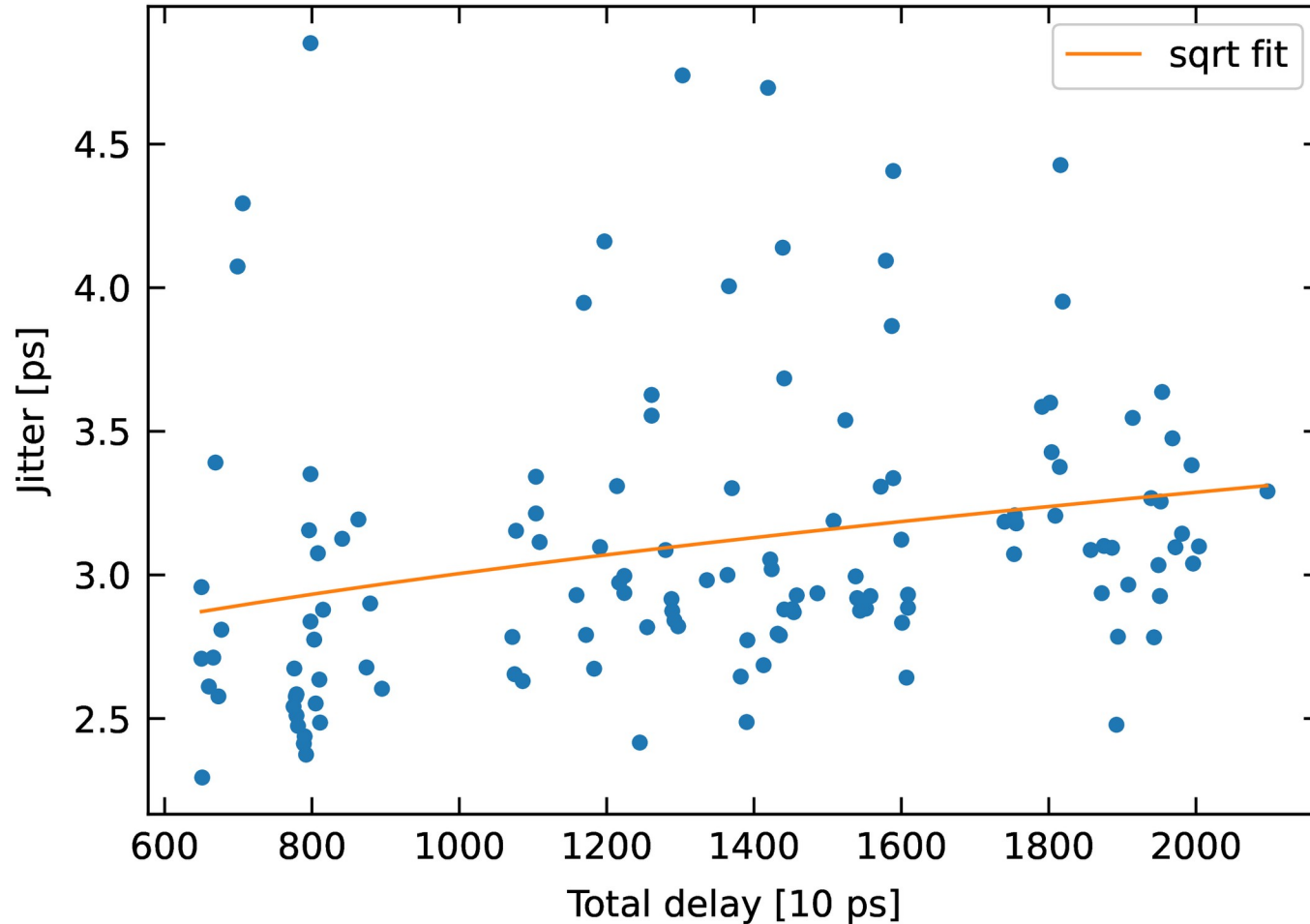
recap'

# Jitter v. total delay



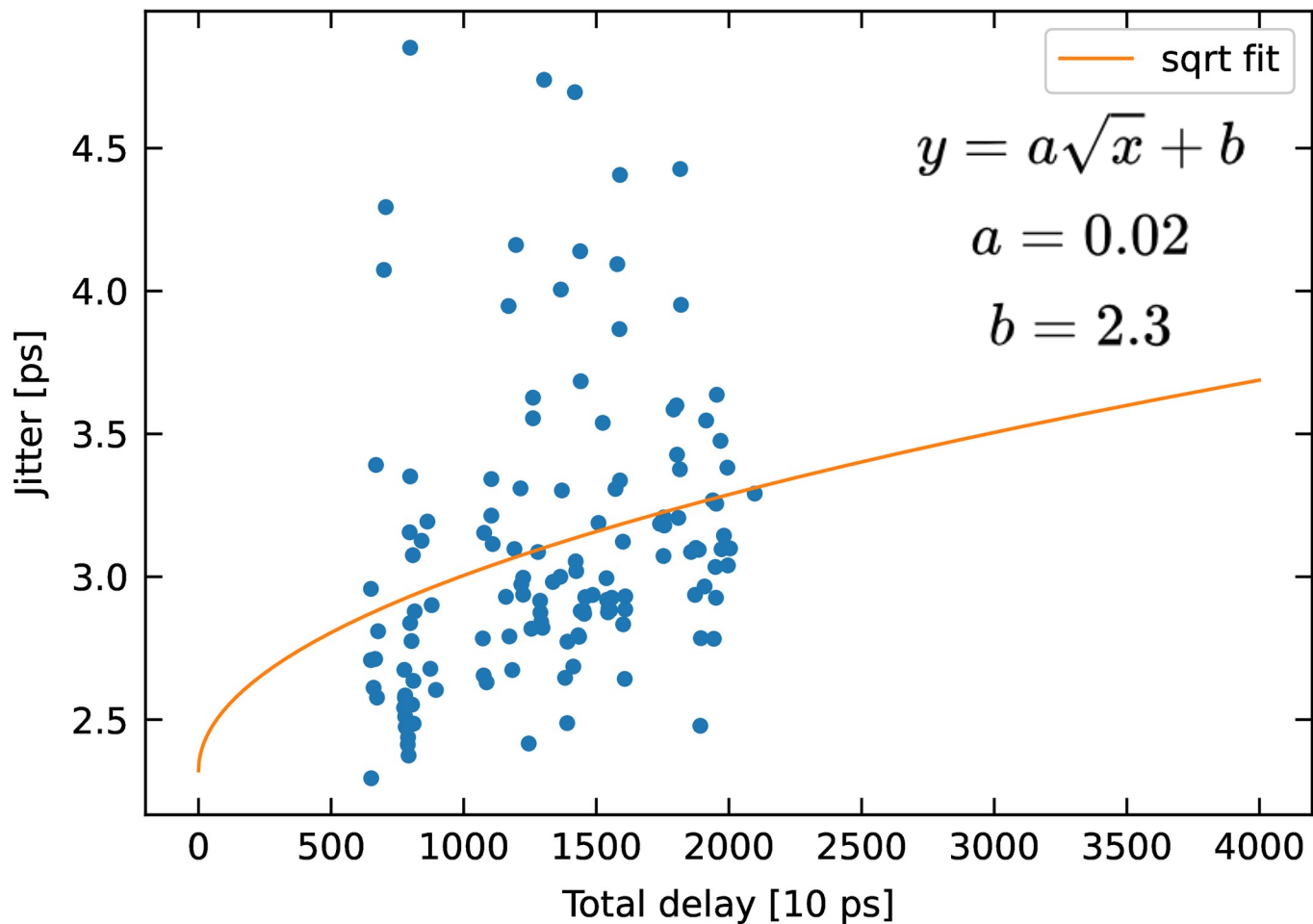
recap'

# Square root fit to $\pm 1$ SD data



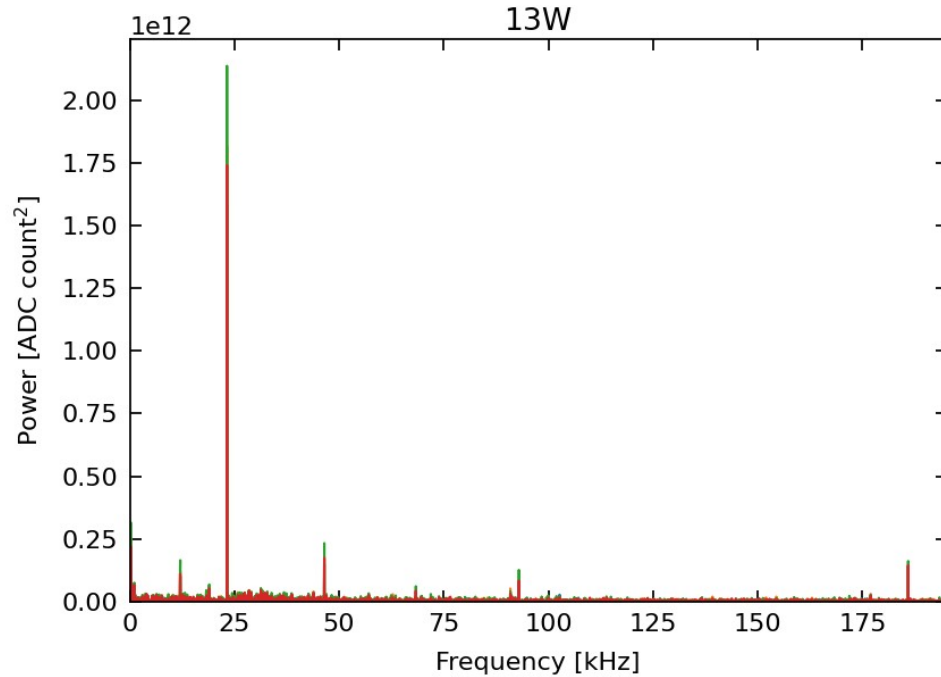
3 ps  
consistent  
with Onsemi  
delay chip  
device specs

# Square root fit to $\pm 1$ SD data

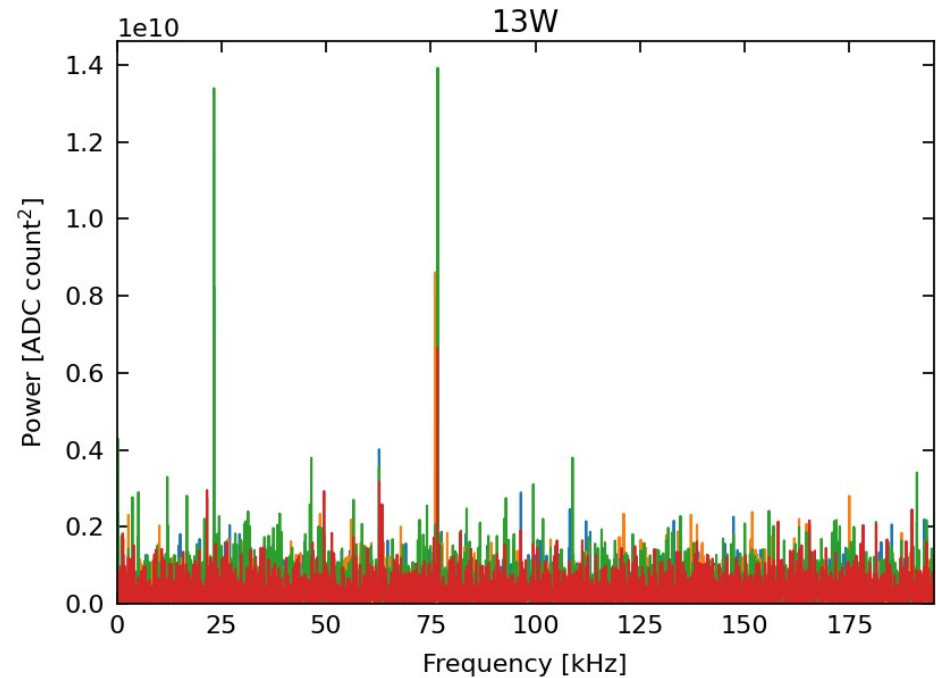


# Frequency spectrum

Per channel, w/ and w/o 4-channel average subtraction



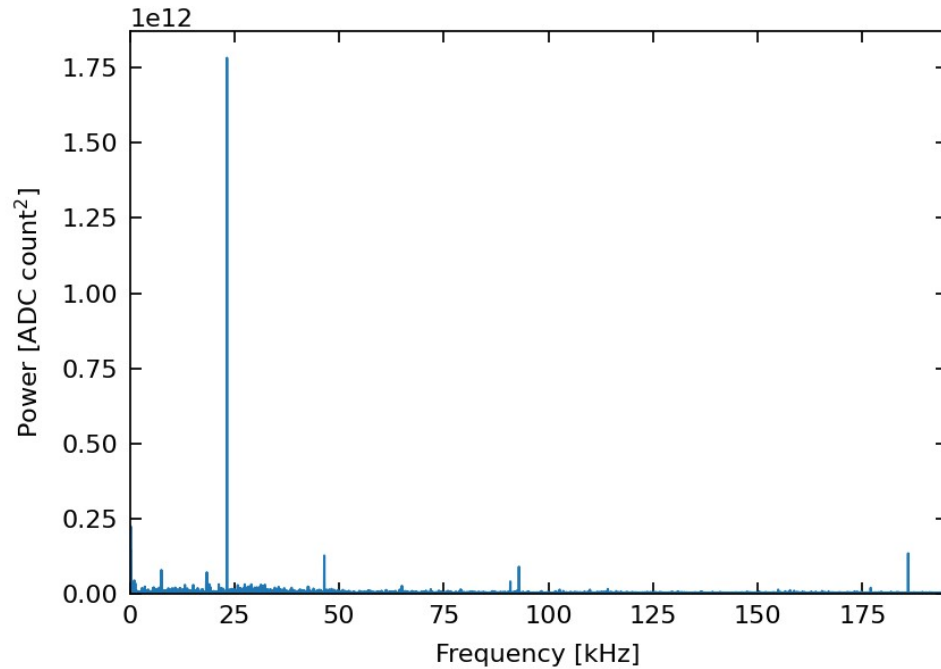
before subtraction



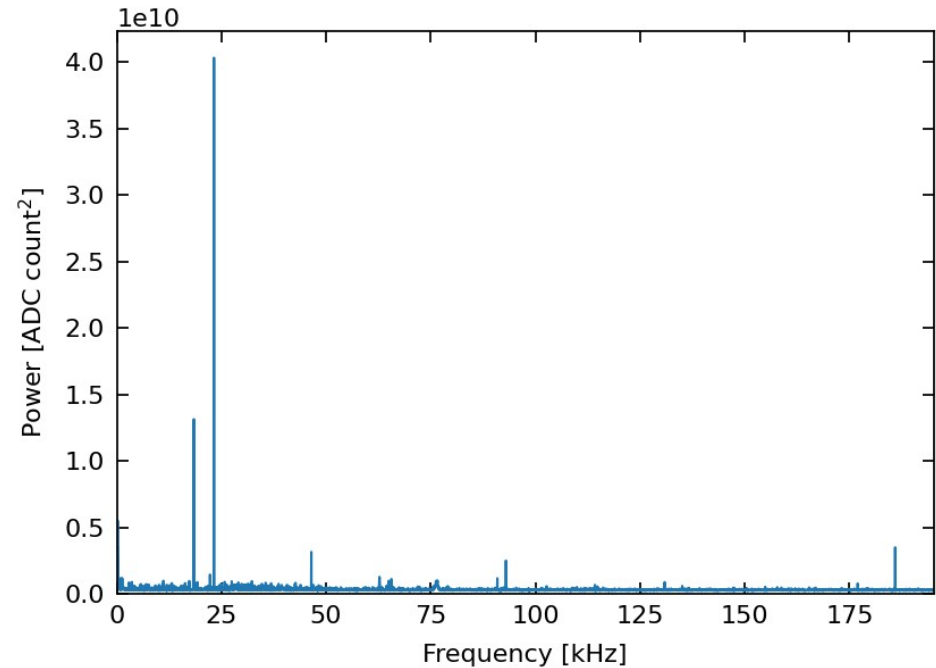
after subtraction

# Frequency spectrum

Average of all the individual FFTs



before subtraction

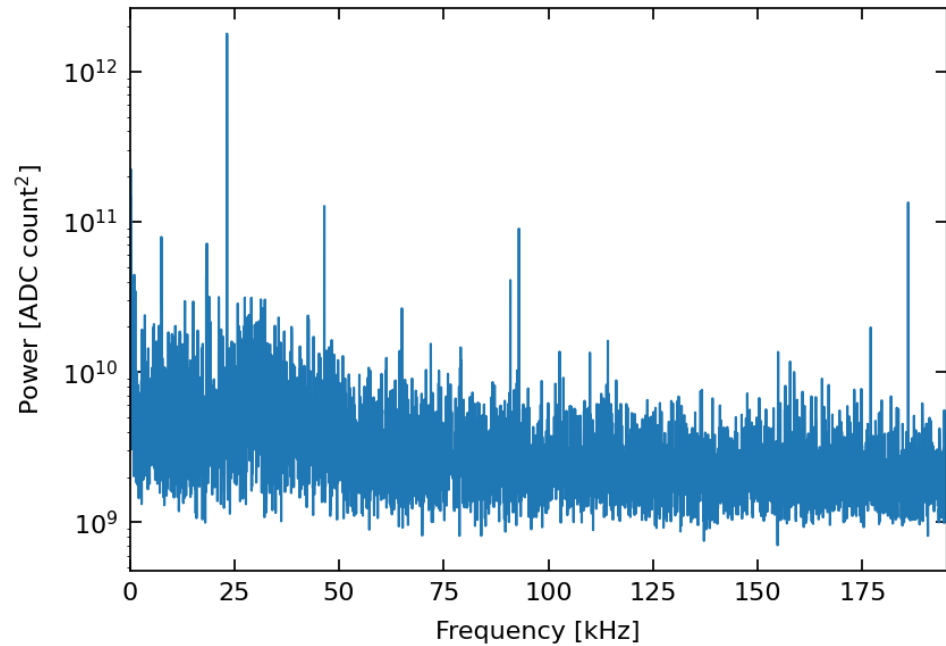


after subtraction

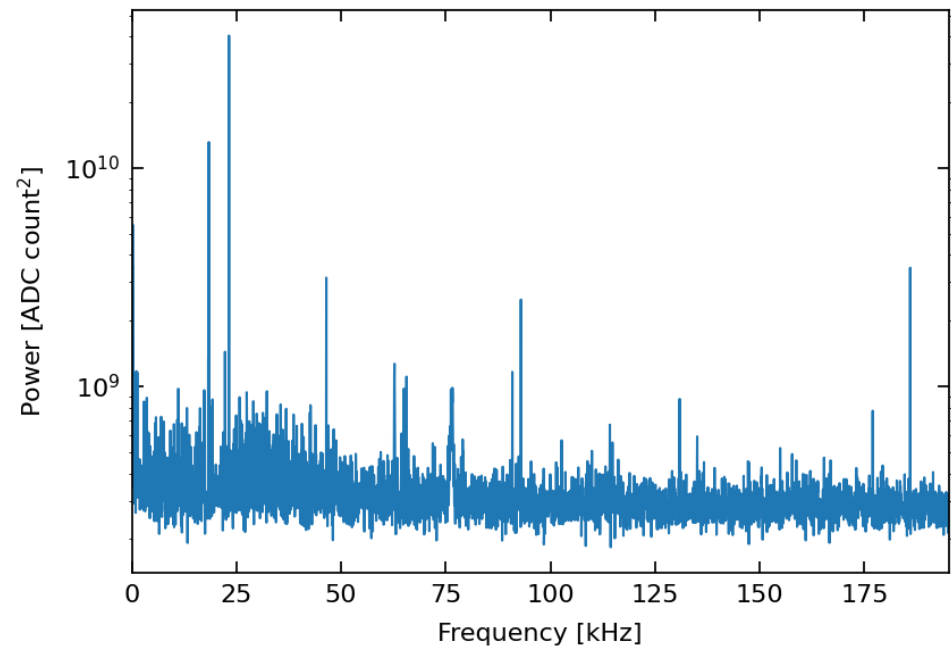


# Frequency spectrum

Average of all the individual FFTs



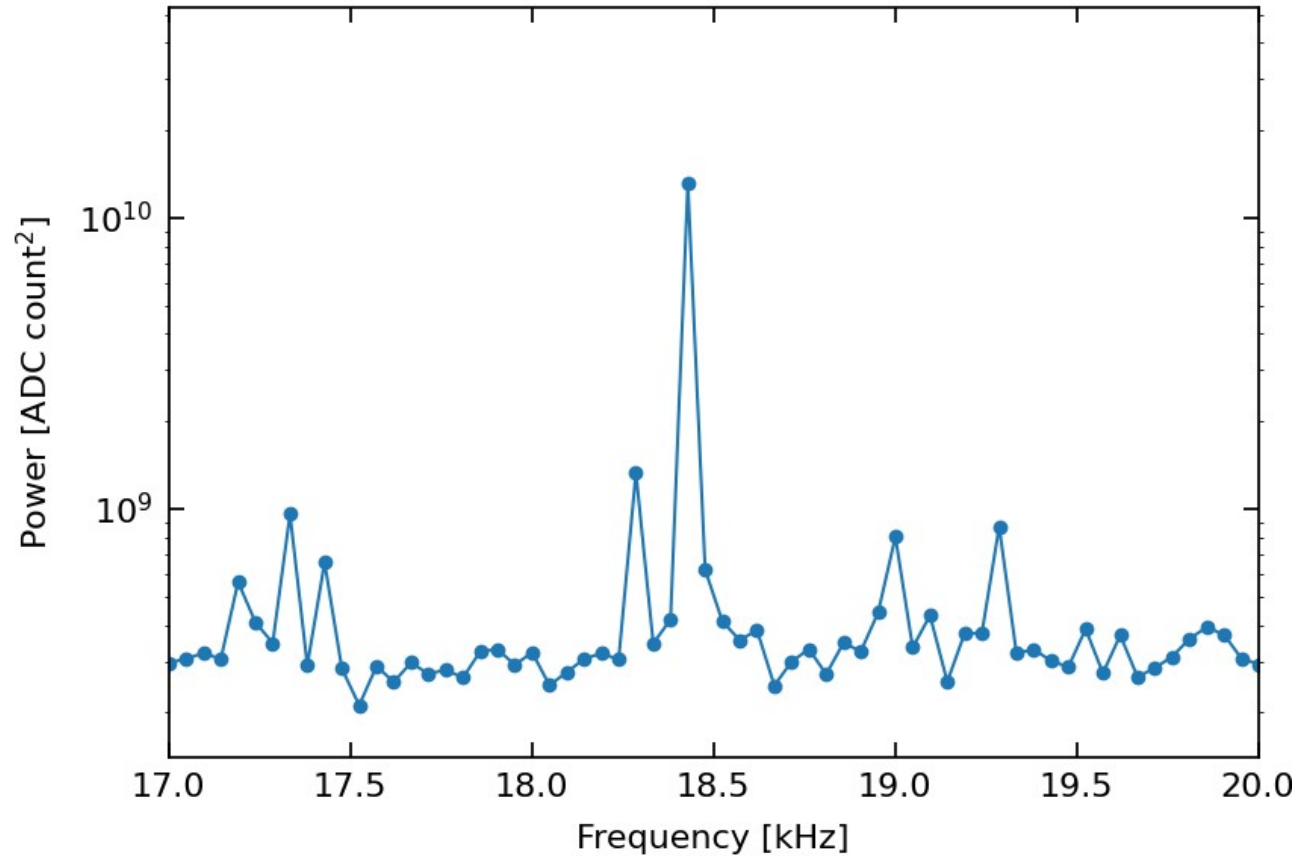
before subtraction



after subtraction

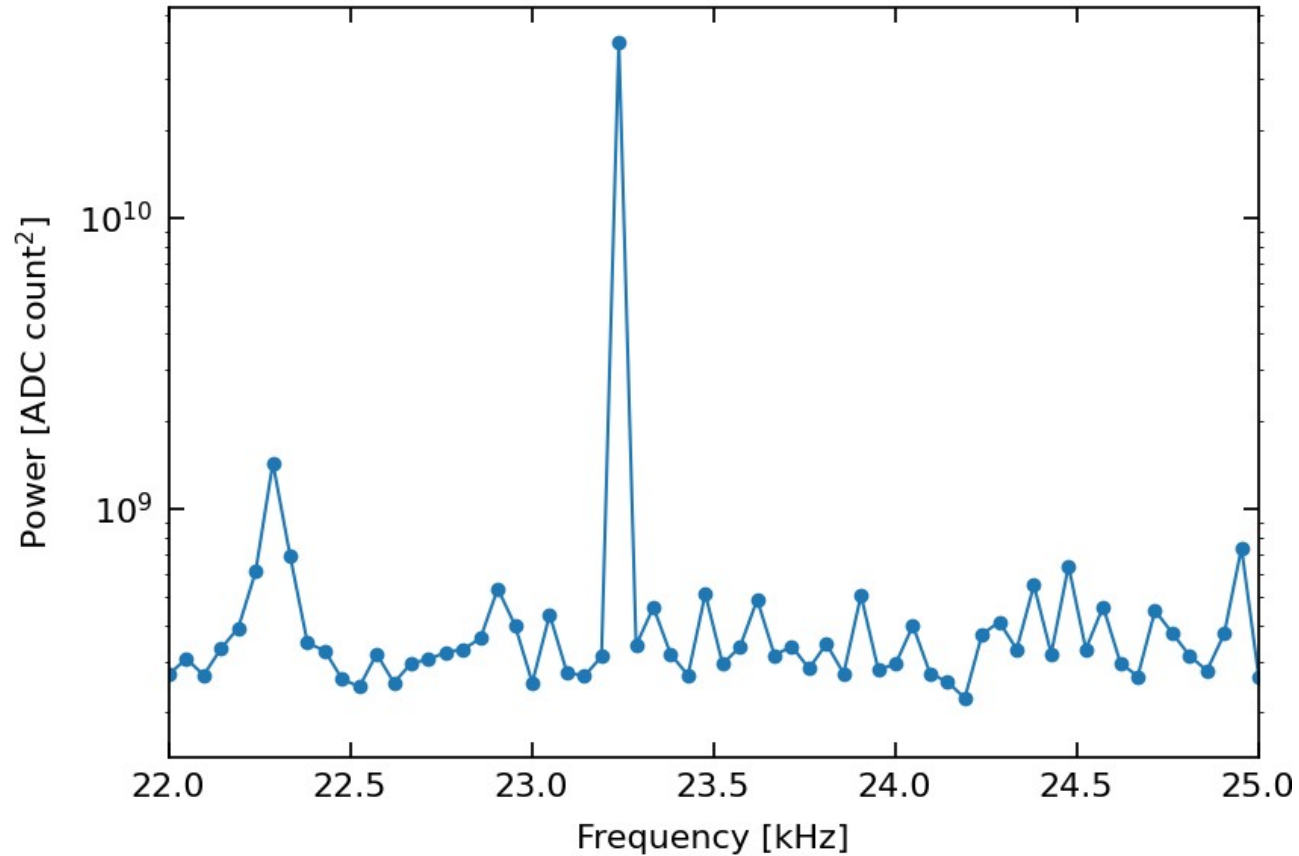
# Frequency spectrum

Average of all the individual FFTs



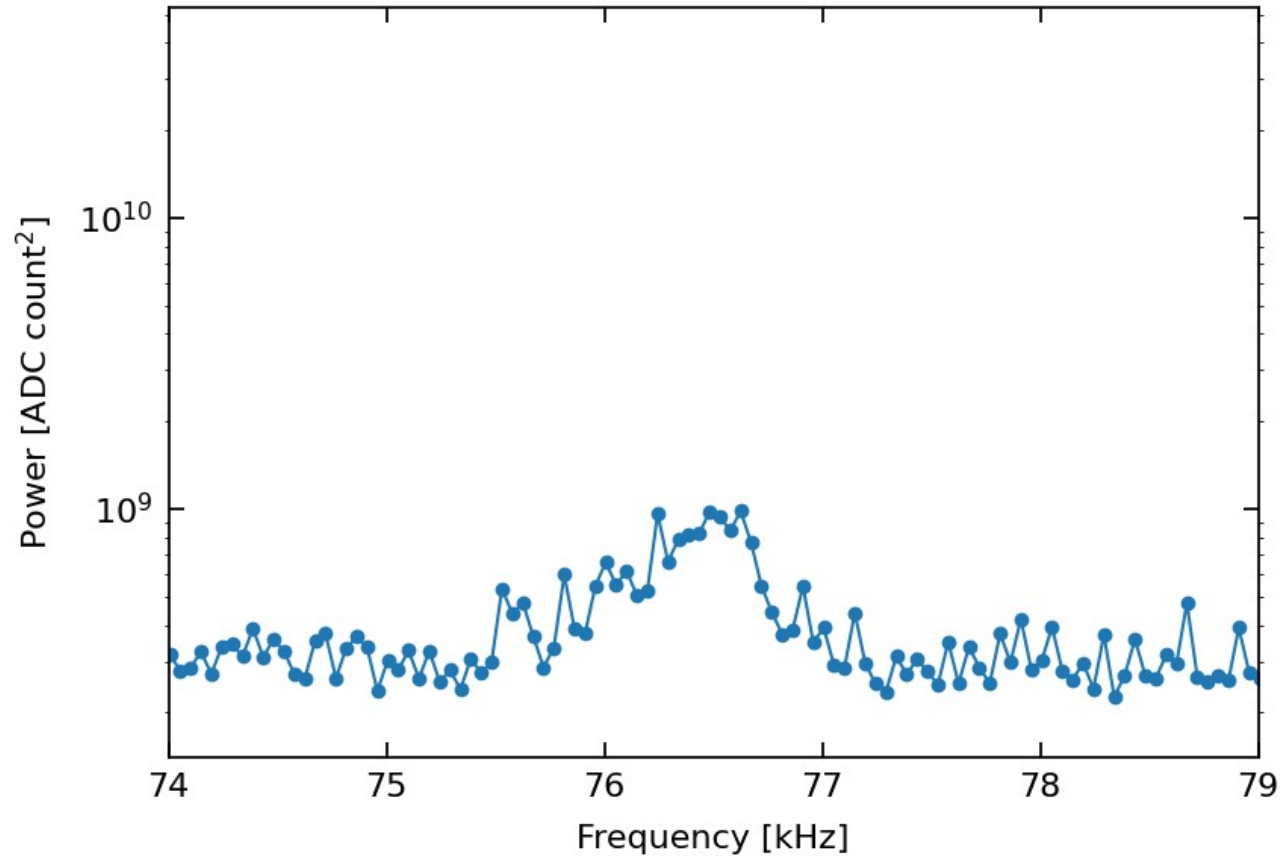
# Frequency spectrum

Average of all the individual FFTs



# Frequency spectrum

Average of all the individual FFTs



Extras