

CBPM waveform time skipping

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CESR instrumentation meeting – Nov 15th, 2024

Waveform time skipping

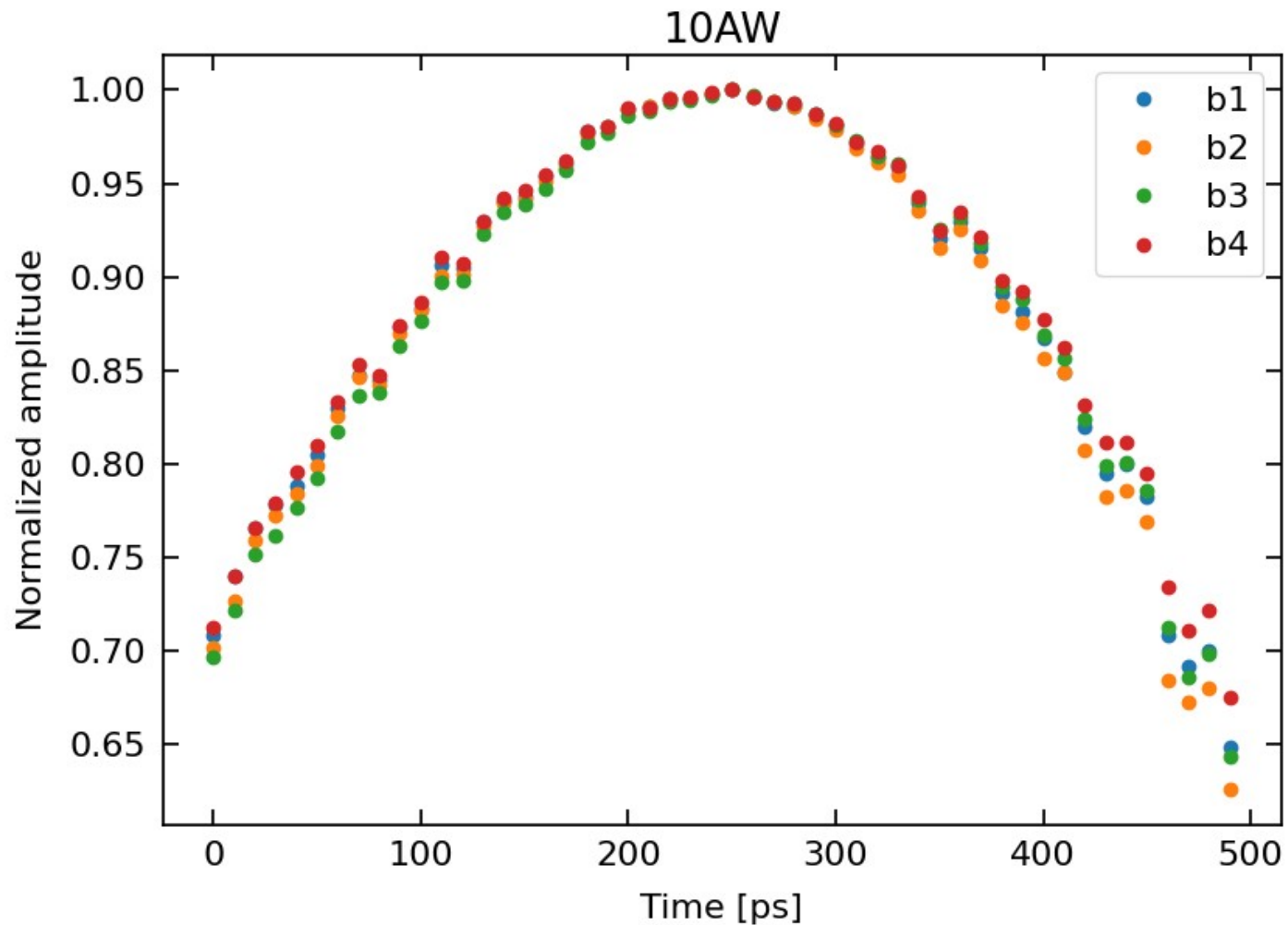
Mike and Laurel made it evident that time step skipping in CBPM waveform time scan is a real thing. See [instr. elog 2385](#).

To add to their work: looked at 10-turn average waveforms from Tuesday maintenance (see [instr. elog 2384](#)) for all available CBPMs.

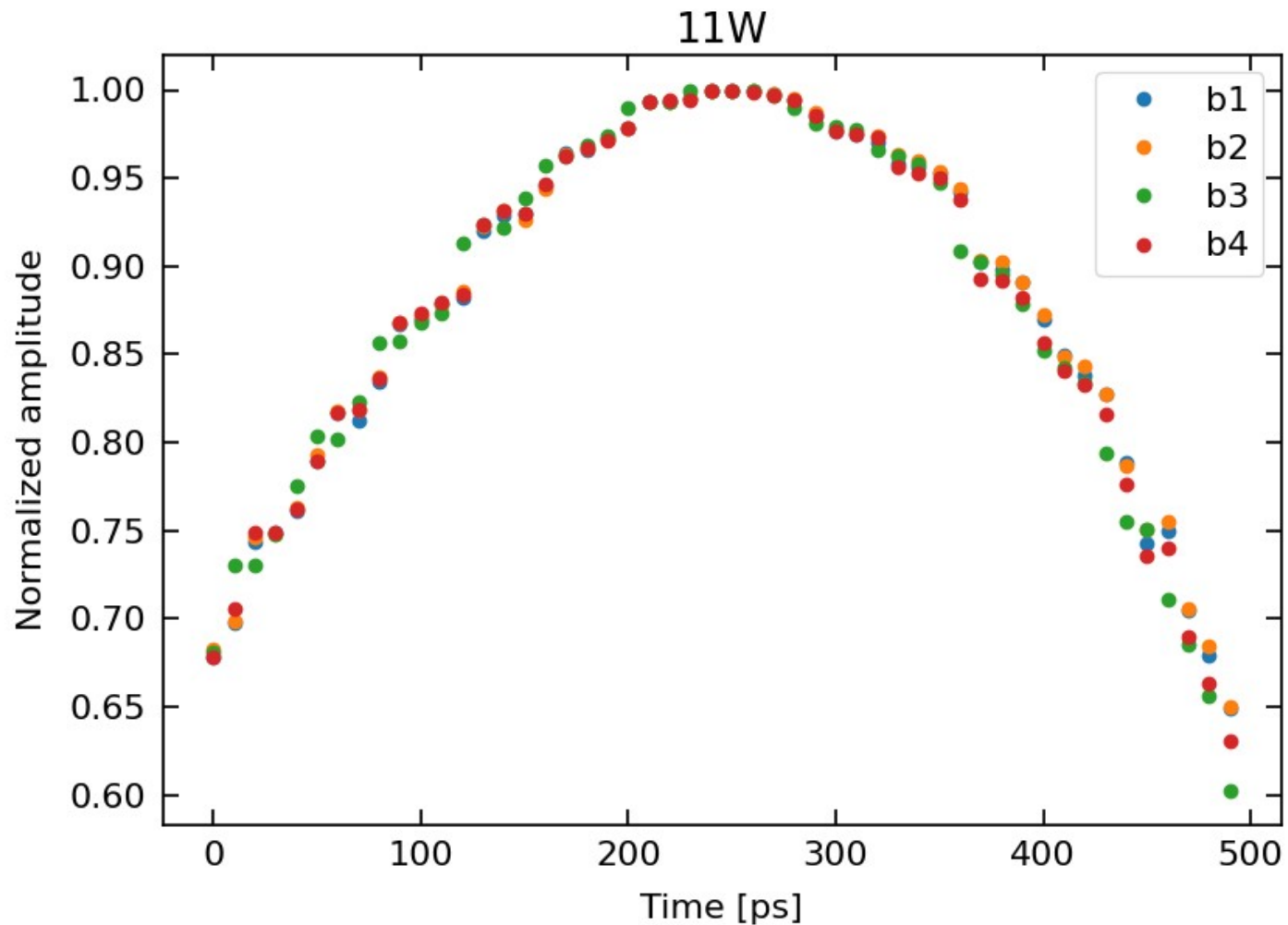
Waveform data:

- `/nfs/cesr/online/instr/data/cbpmII/tscan/51/TS-051898*`
- `/nfs/cesr/online/instr/data/cbpmII/tscan/51/TS-051904*`

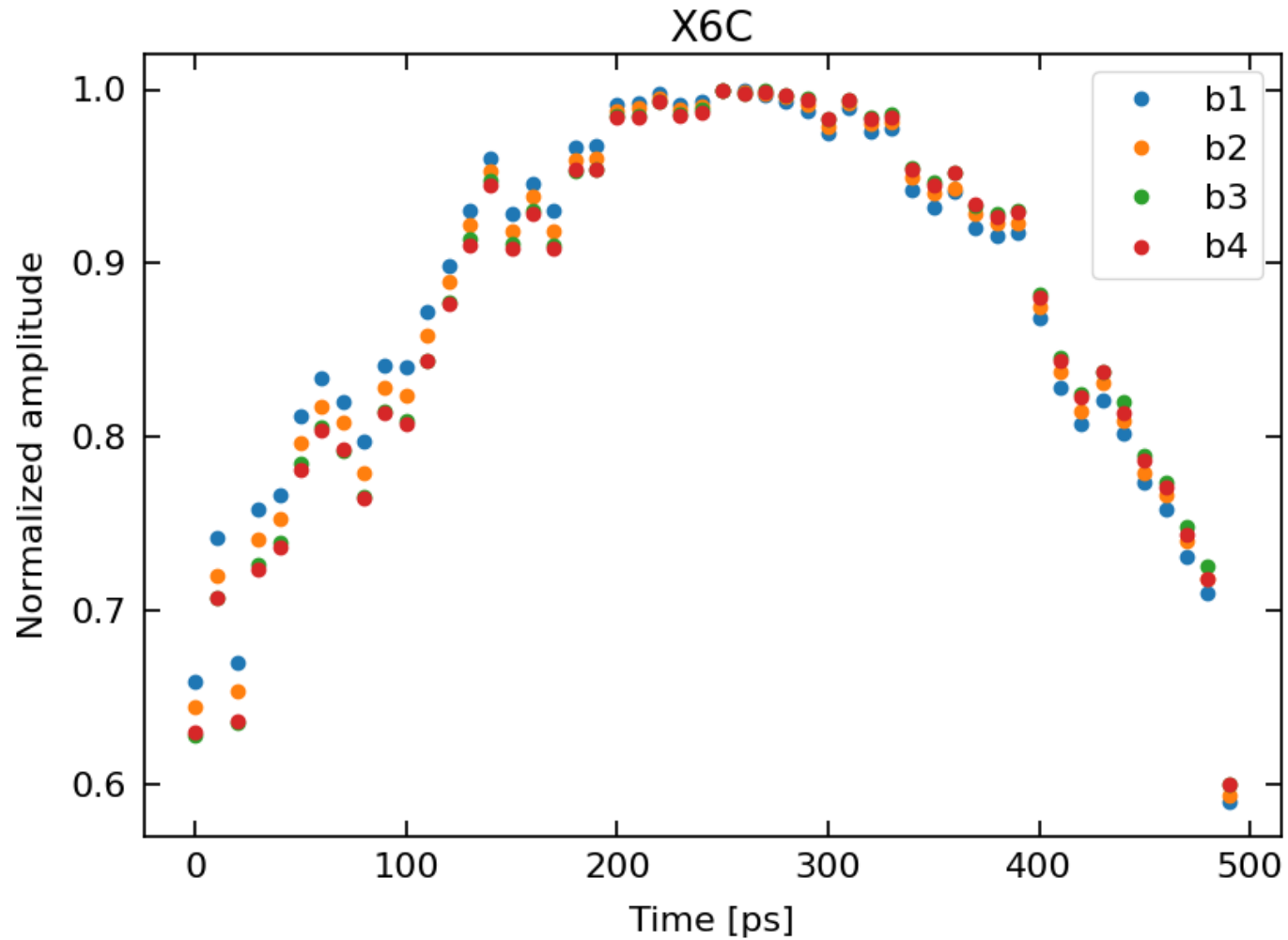
Example waveforms



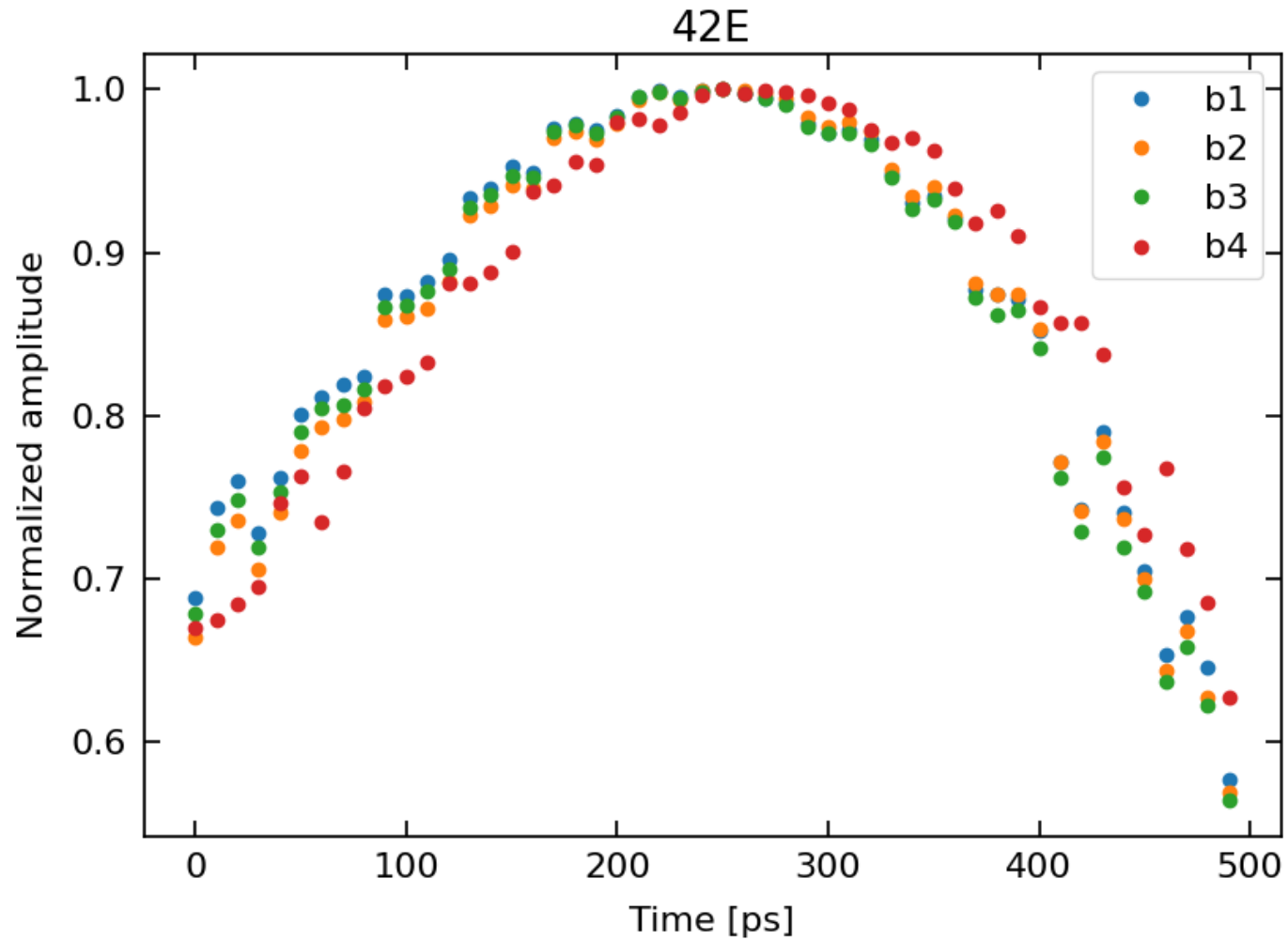
Example waveforms



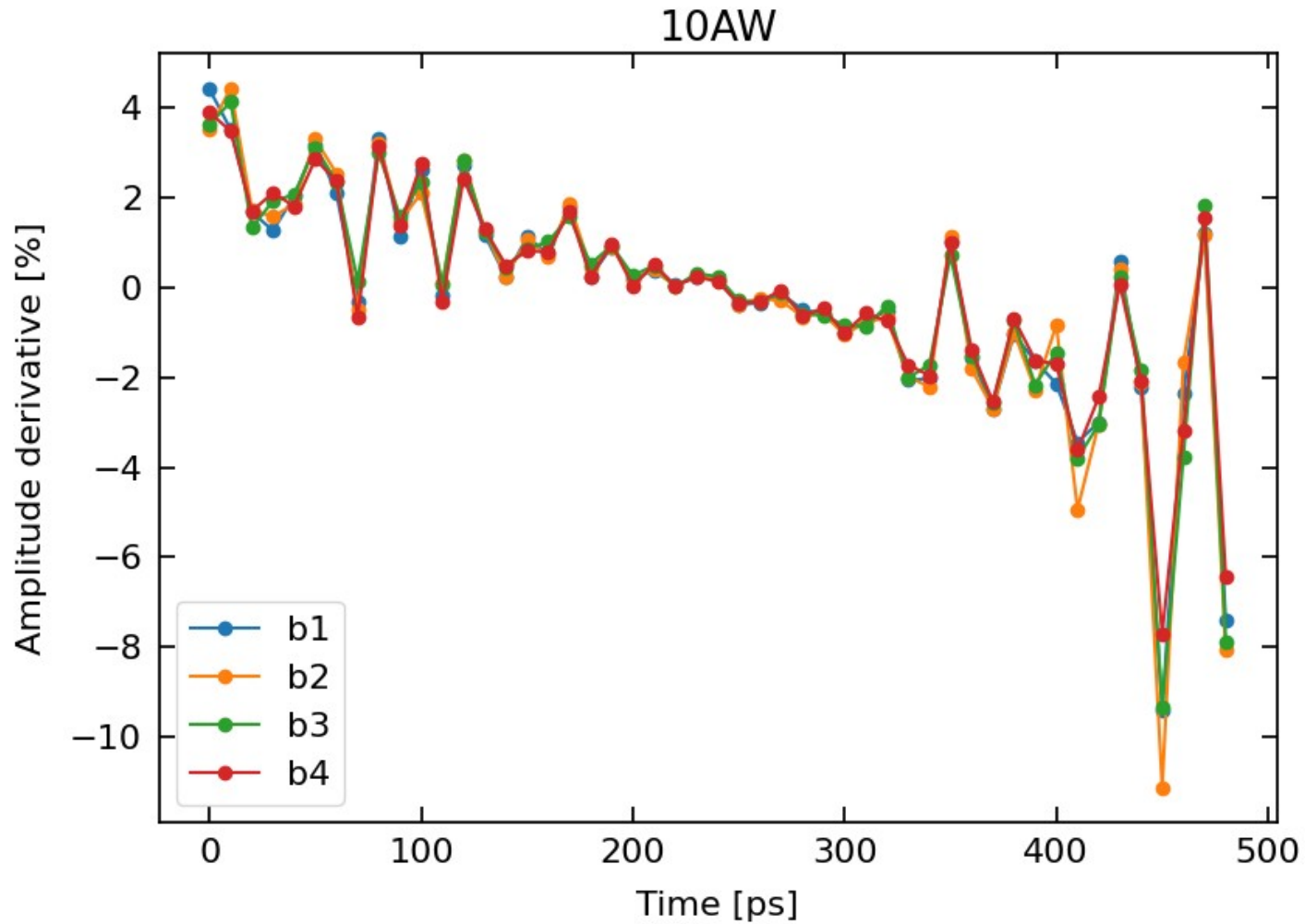
Example waveforms



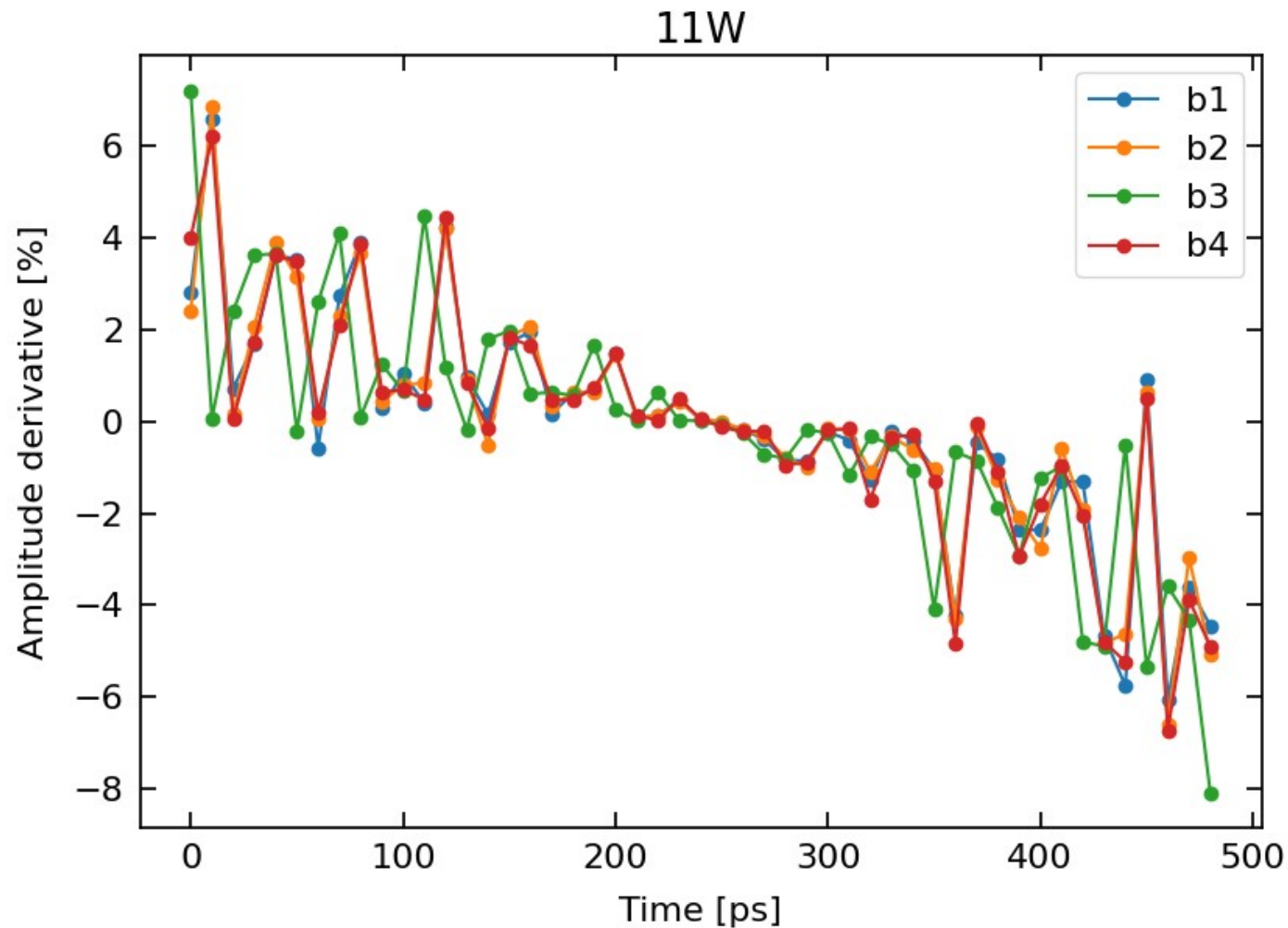
Example waveforms



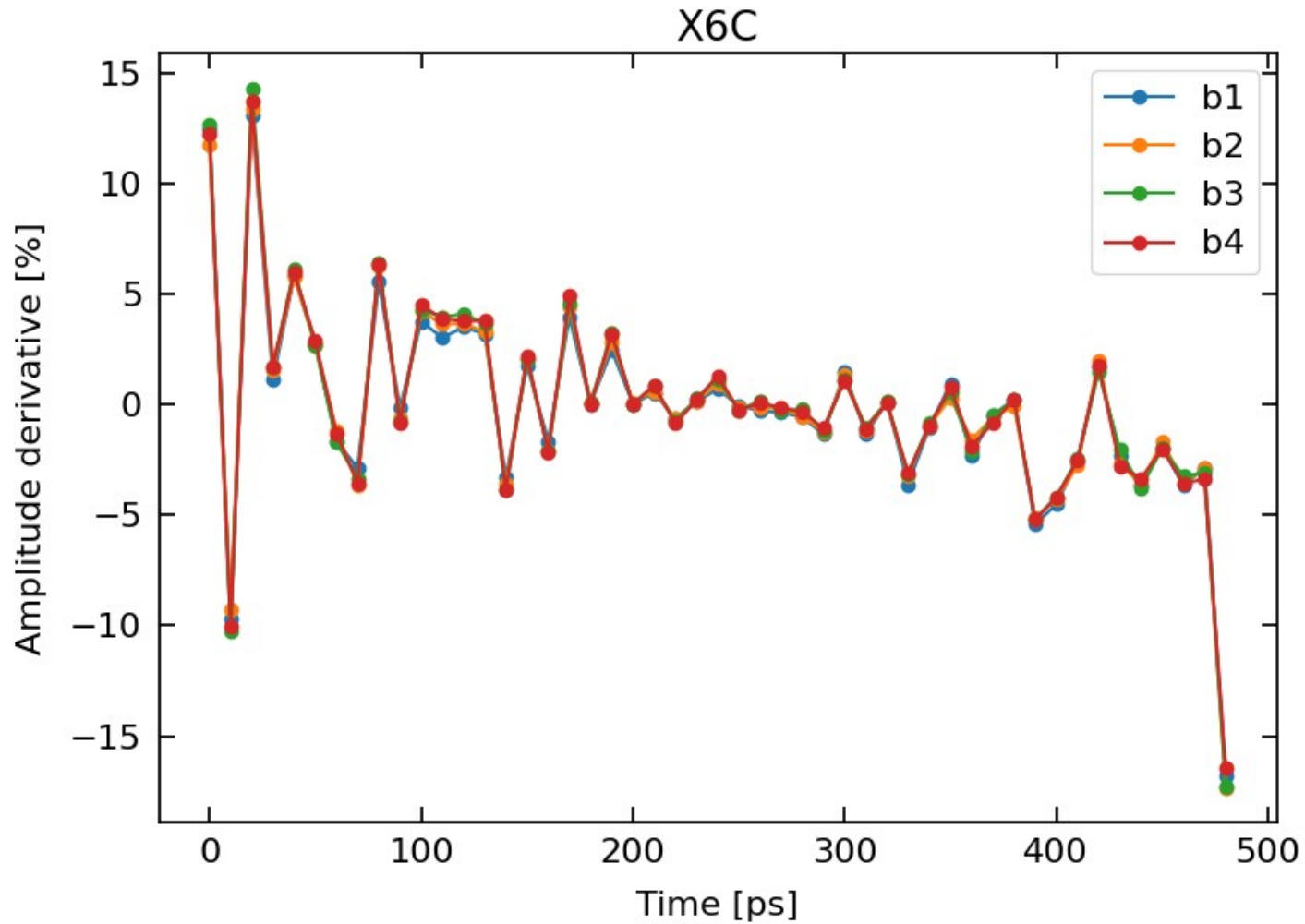
Waveform derivatives



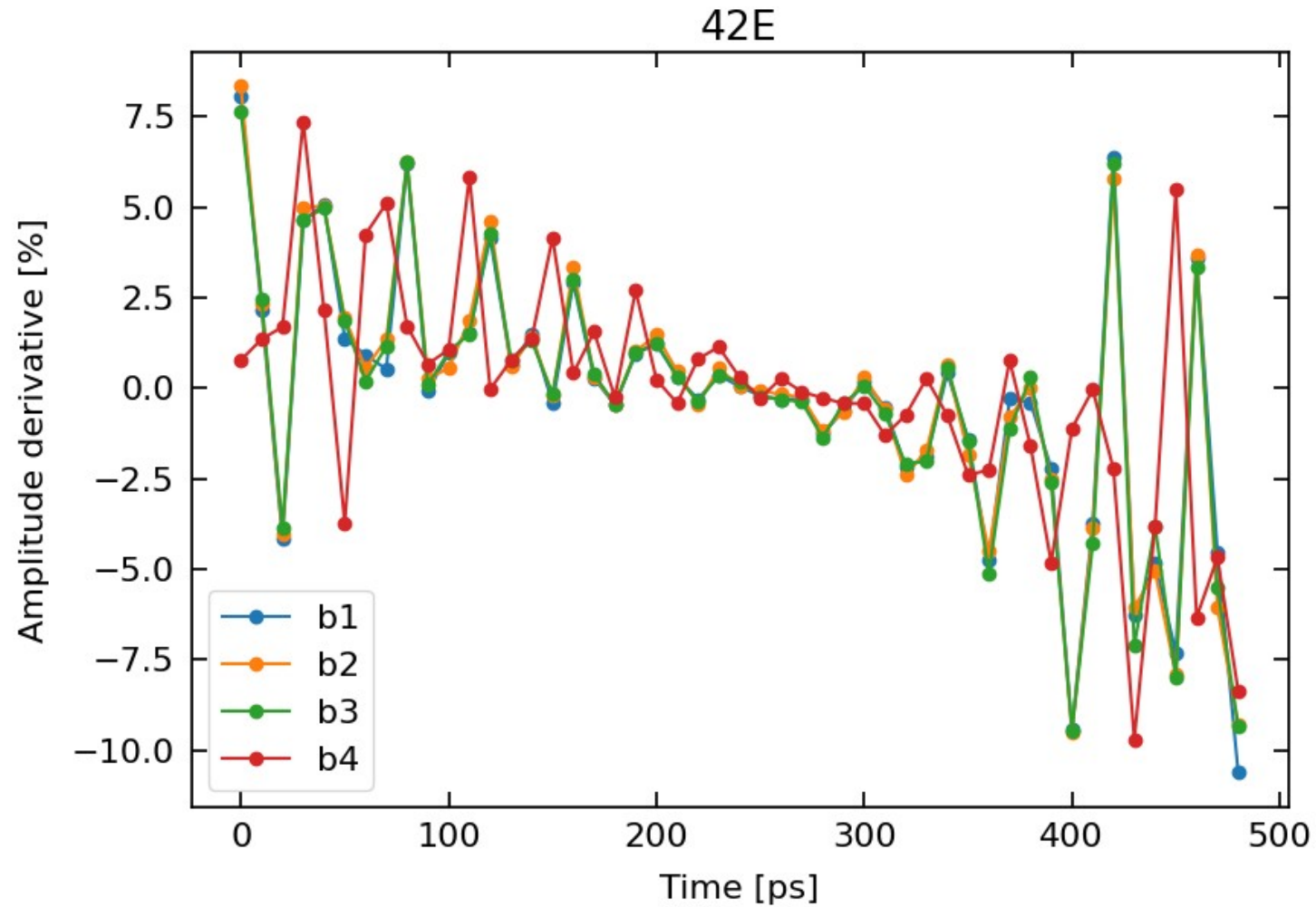
Waveform derivatives



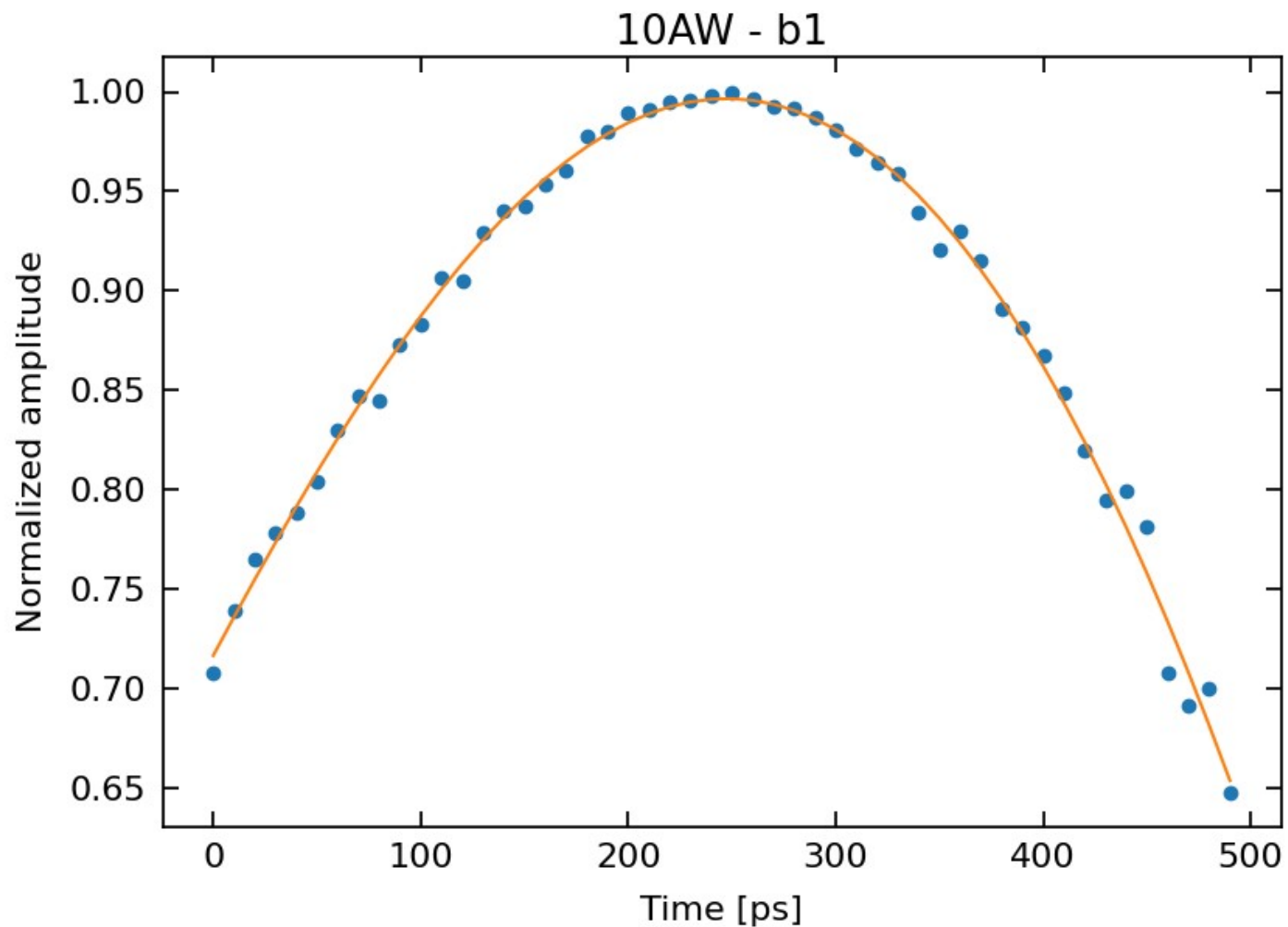
Waveform derivatives



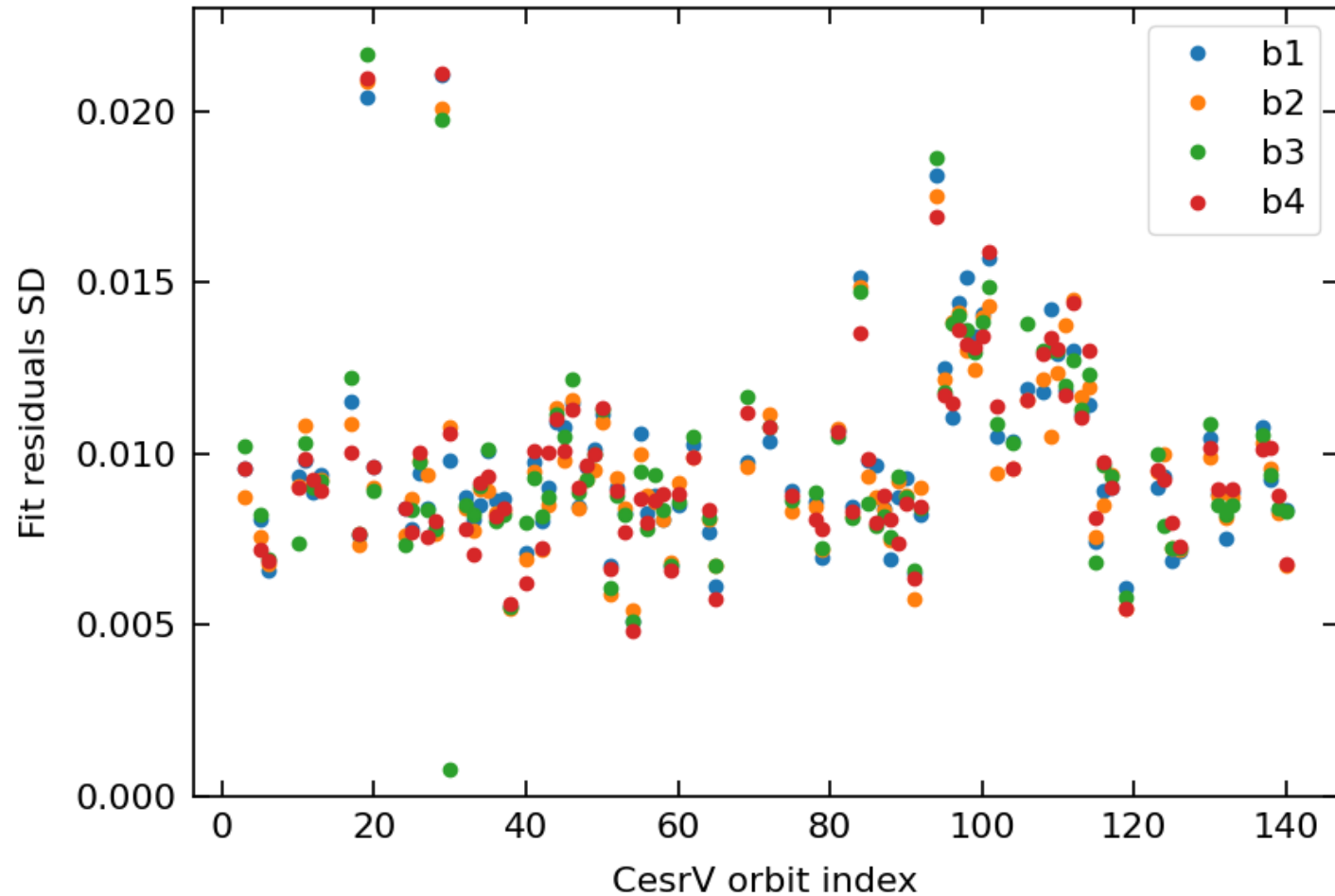
Waveform derivatives



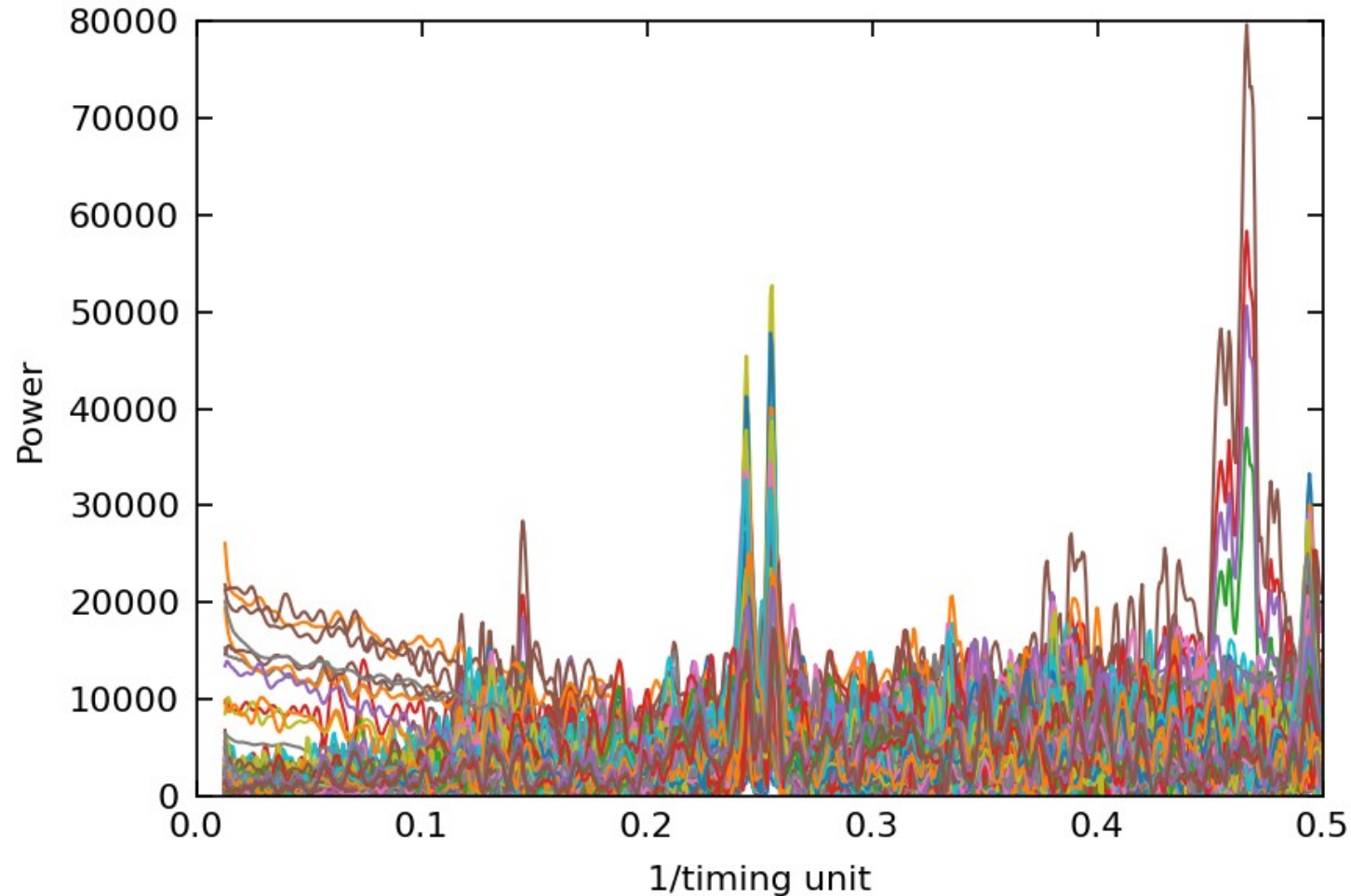
Waveform fit (4th order poly.)



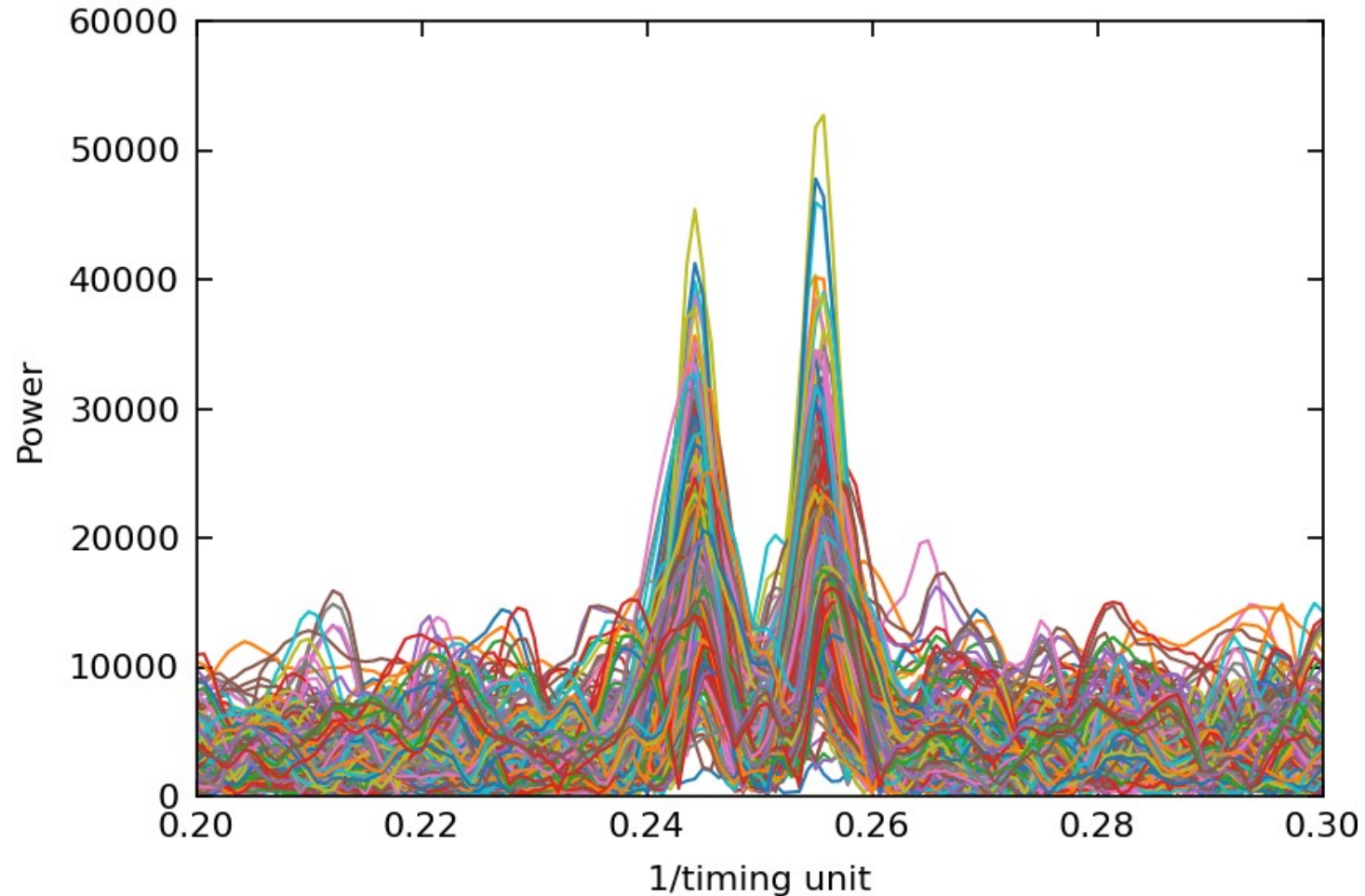
Standard deviation of fit residuals



Waveform derivative FFTs



Waveform derivative FFTs



Takeaway

Waveform time step skipping is observed in **all the modules**

For 30% of modules, 4 channels are locked in their skipping

In remaining modules, time skipping is off by ± 1 step

Extras

13W

