VD Coldbox PNS runs
(April 24)

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Overview

Runs with PNS (TPC+PDS) since 16.04.2024.

Flat View	Threaded View	New Entry	Advanced Search	Display Thread	Notification Configuration

Entries from last: Default Fetch   Search all cols: [   ]   Showing 1 to 15 of 500 entries   Show 15   << < > >>

| Date_Time	Status	Author	Subject	Message Type	System Affected	Text
Search Date_Time	Search Stat	Search Author	Search Subject	Search Message Type	Search System Affected	Search Text
2024-04-17 10:33	open	dvargas	Run 25050 (PROD) started on...	Automatic	DAQ	PNS run Configuration:...
2024-04-17 10:30	open	dvargas	RE: Run 25049 (PROD) started on...	Automatic	DAQ	Run 25049 (PROD) stopped on np02vdcoldbox log...
2024-04-17 10:11	open	dvargas	Run 25049 (PROD) started on...	Automatic	DAQ	testing the readout server fix Configuration:...
2024-04-16 20:06	open	Dominique Duchesneau	CRP HV bias setting changed (-1.7,...	Default	CRP	The CRP HV biases are changed to: shield: -1.7 kV...
2024-04-16 17:07	open	wketchum	RE: Run 25036 (PROD) started on...	Automatic	DAQ	Run 25036 (PROD) stopped on np02vdcoldbox log...
2024-04-16 12:09	open	wketchum	Run 25036 (PROD) started on...	Automatic	DAQ	CRP + PDS, PNS turned back on Configuration:...
2024-04-16 12:08	open	wketchum	RE: Run 25035 (PROD) started on...	Automatic	DAQ	Run 25035 (PROD) stopped on np02vdcoldbox log...
2024-04-16 12:05	open	wketchum	Run 25035 (PROD) started on...	Automatic	DAQ	CRP + PDS, PNS turned off to try to compare tp rate...
2024-04-16 12:05	open	wketchum	RE: Run 25034 (PROD) started on...	Automatic	DAQ	Run 25034 (PROD) stopped on np02vdcoldbox log...
2024-04-16 11:56	open	Wesley Robert Ketchum	RE: Run 25033 (PROD) started on...	Automatic	DAQ	run 25033 also with no neutrons, as we were debugging the...
2024-04-16 11:55	open	wketchum	Run 25034 (PROD) started on...	Automatic	DAQ	CRP + PDS + PULSED NEUTRON SOURCE!! (100 prescale,...
2024-04-16 11:54	open	wketchum	RE: Run 25033 (PROD) started on...	Automatic	DAQ	Run 25033 (PROD) stopped on np02vdcoldbox log...
2024-04-16 11:38	open	wketchum	Run 25033 (PROD) started on...	Automatic	DAQ	CRP + PDS + PULSED NEUTRON SOURCE!! (100 prescale,...

Running now

Reading out 10 DAPHNE channels: 0-7, 10-17, 20-27, 40-47, 1, 36;

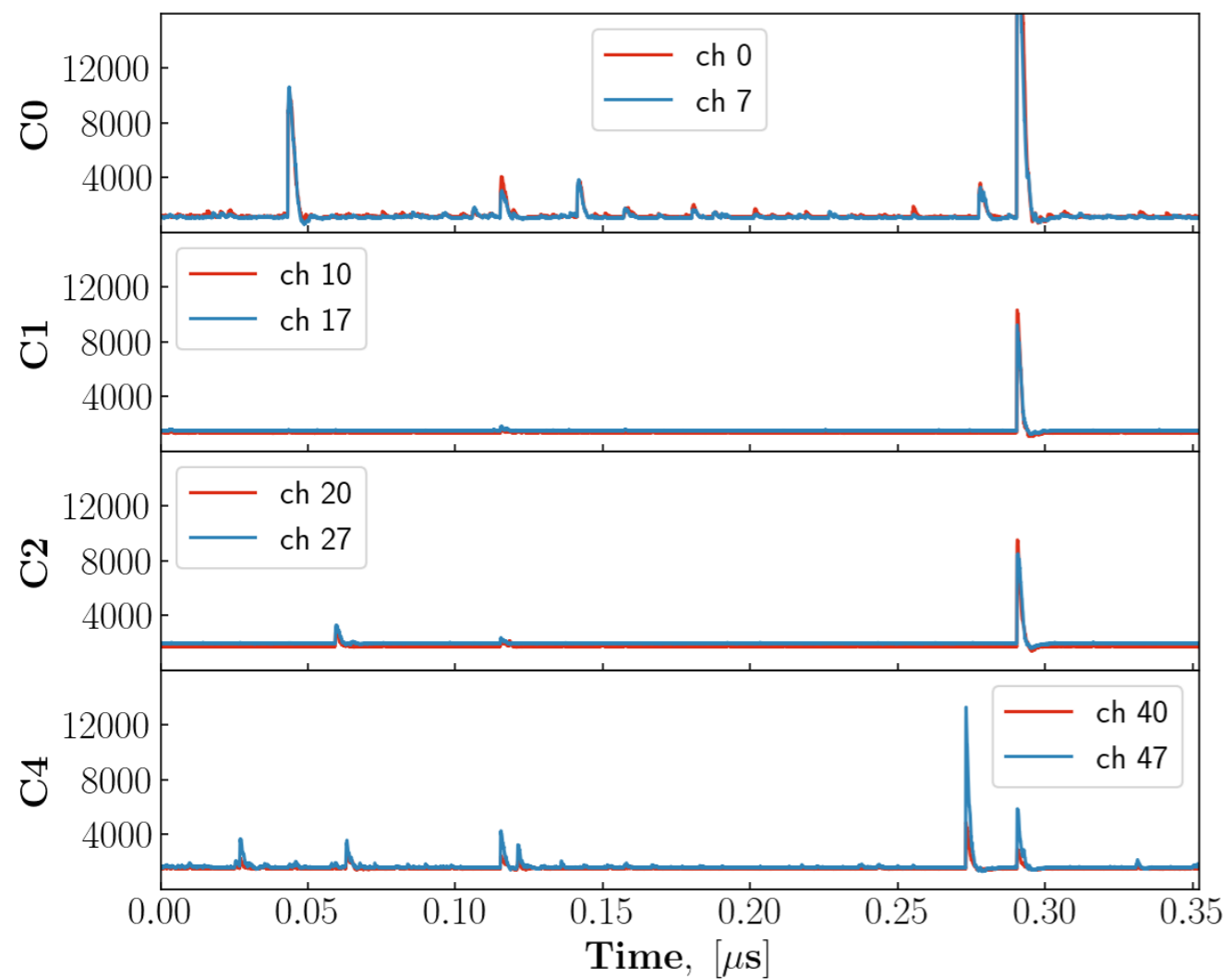All channels are in the streaming mode;

Readout window — 65536 clock ticks ($\sim 1\ ms$);
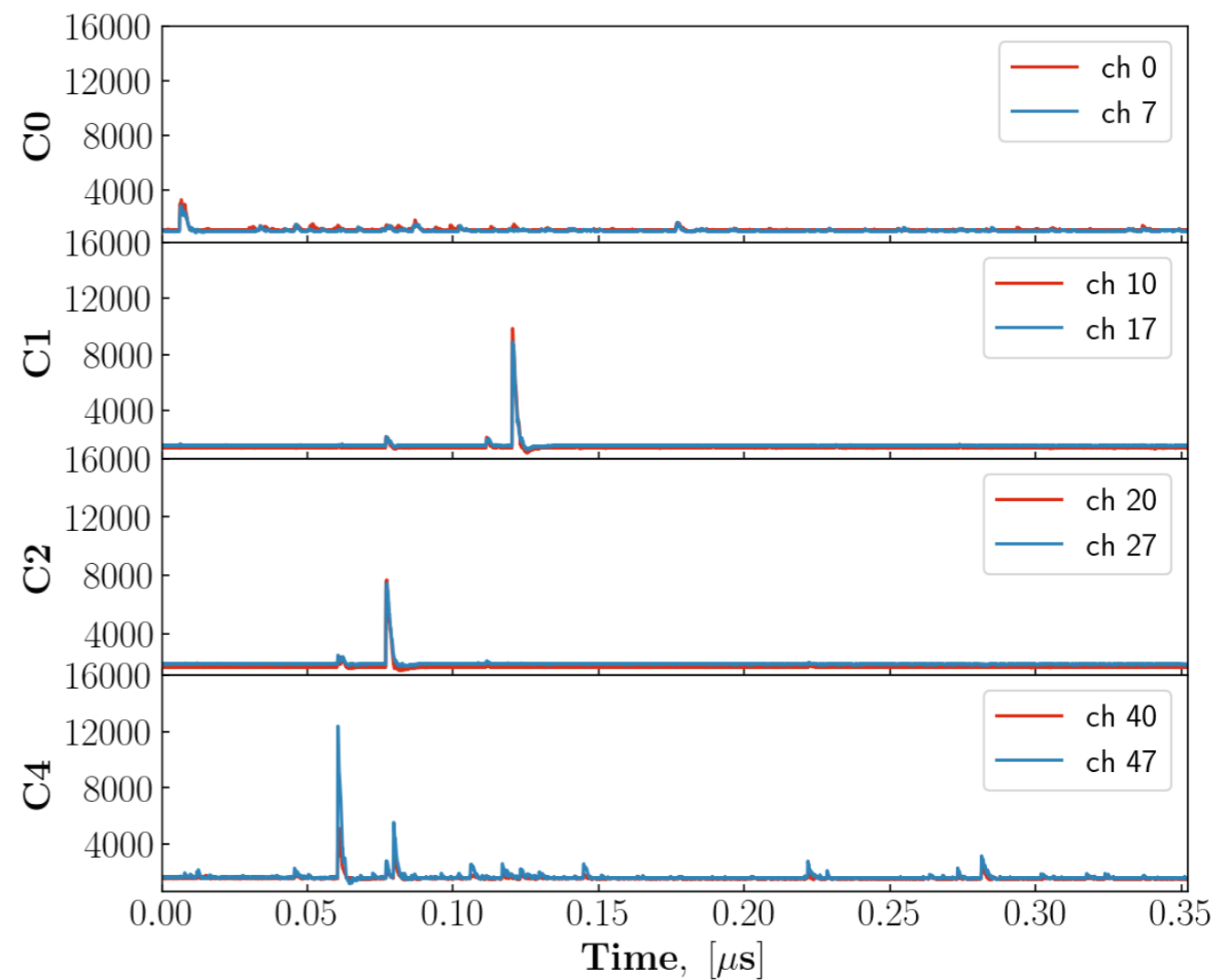
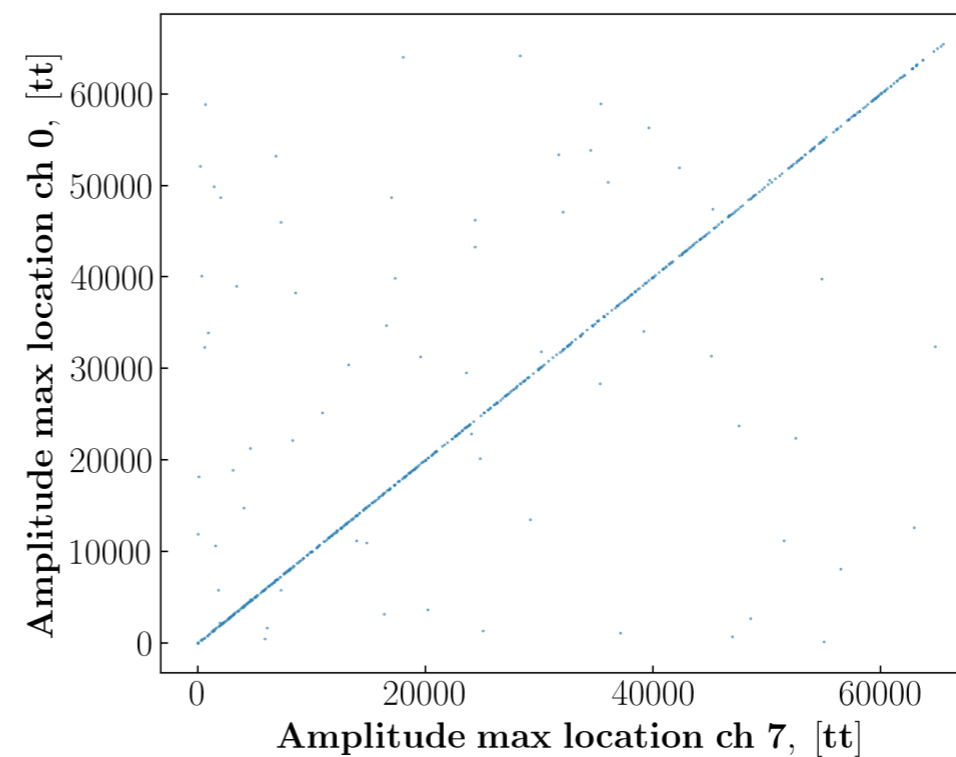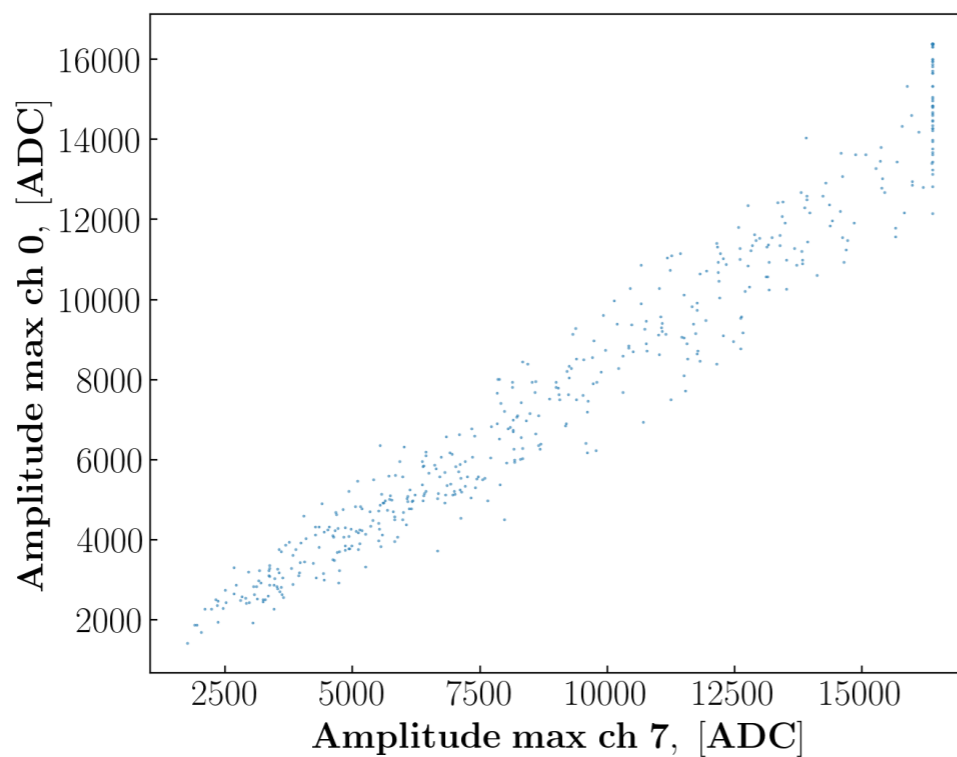Trigger — $4\ \text{Hz}$ (80 Hz from PNS prescaled);
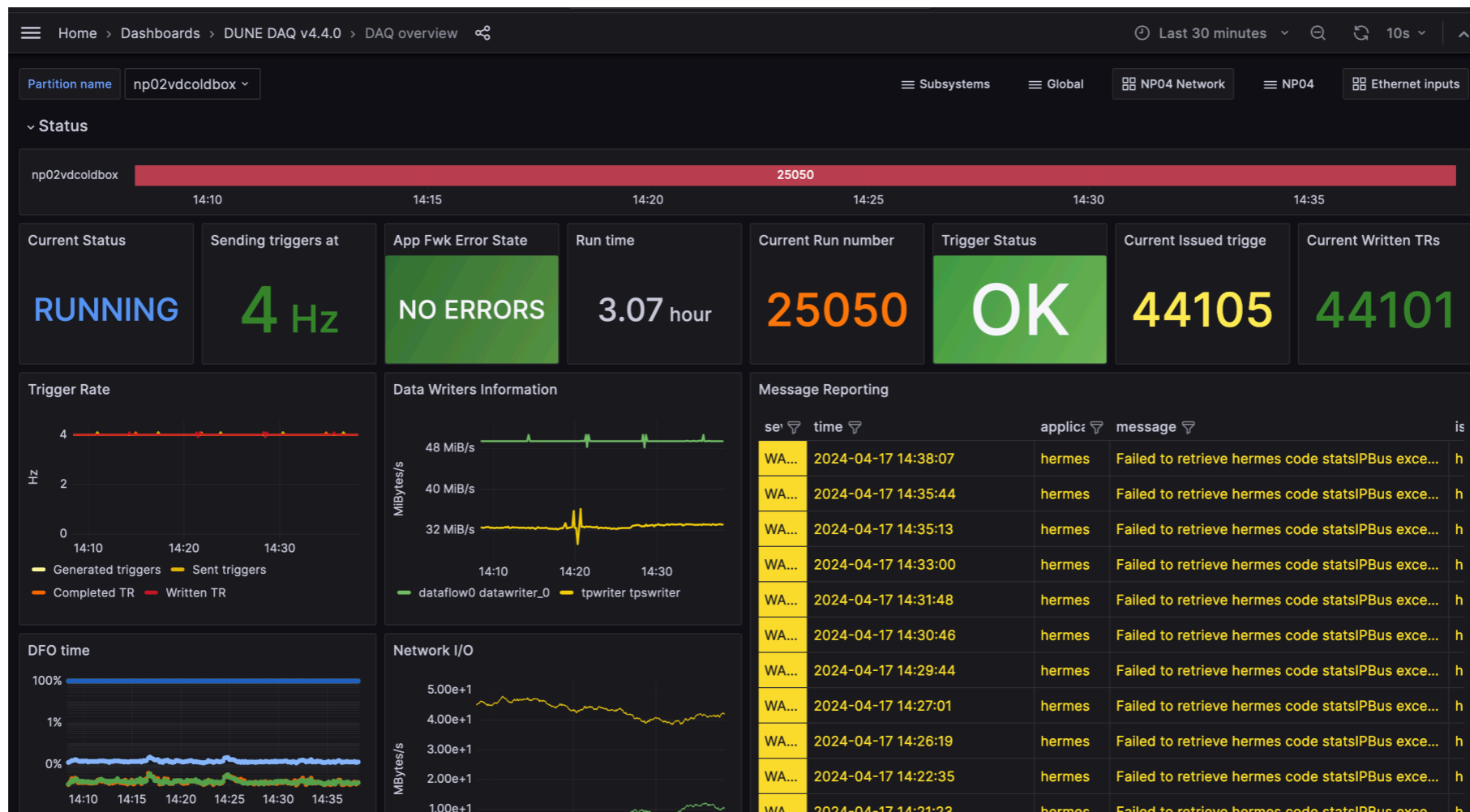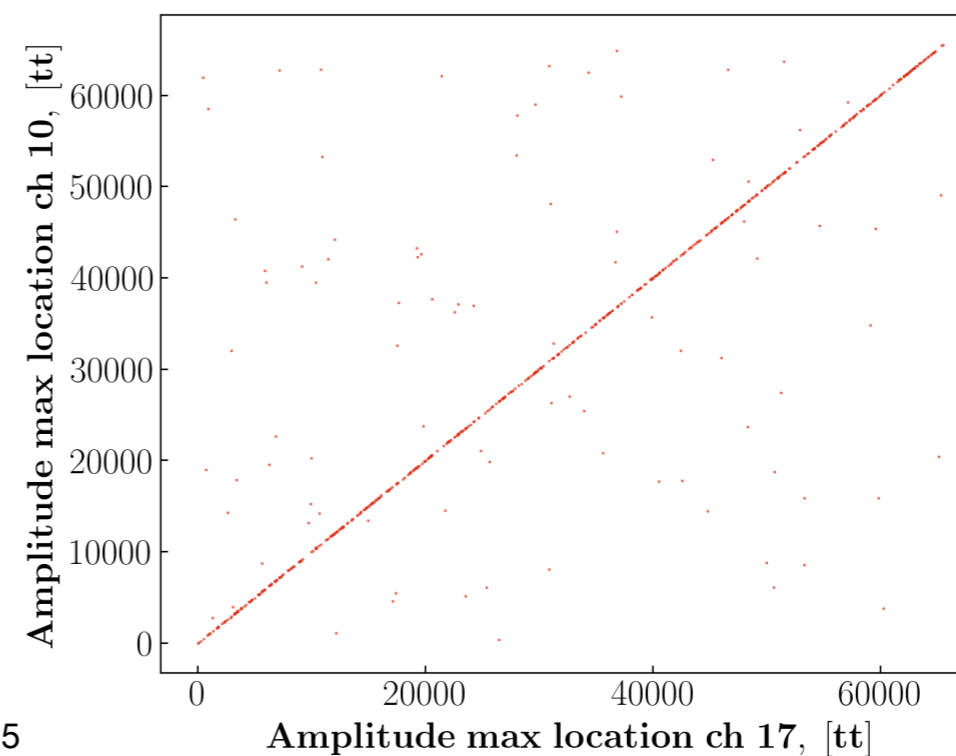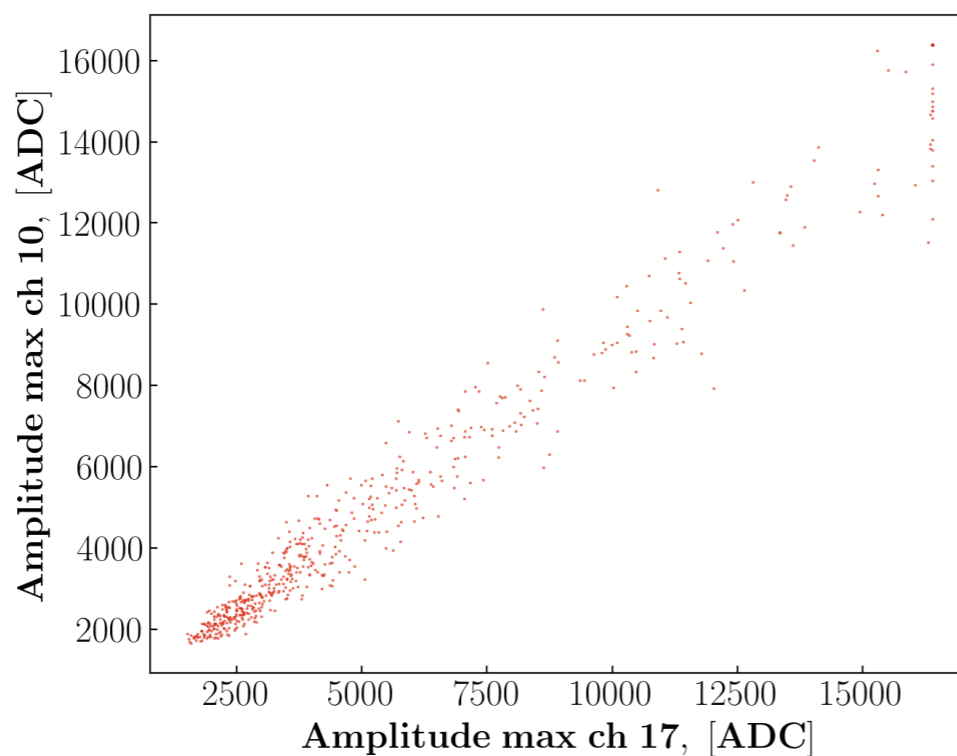
Waveform examples
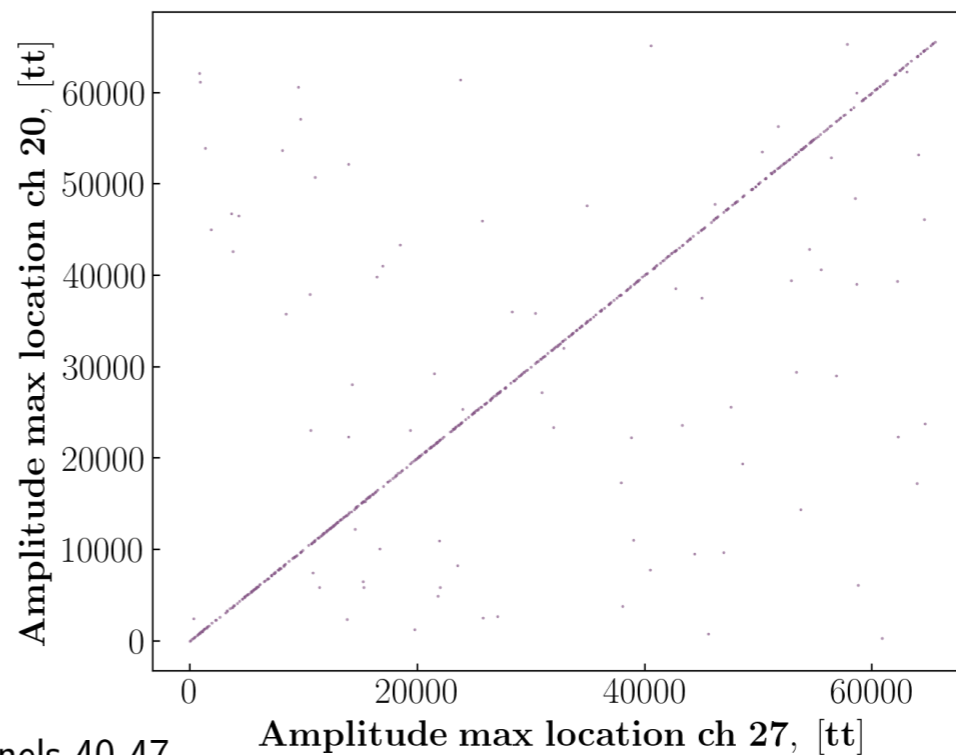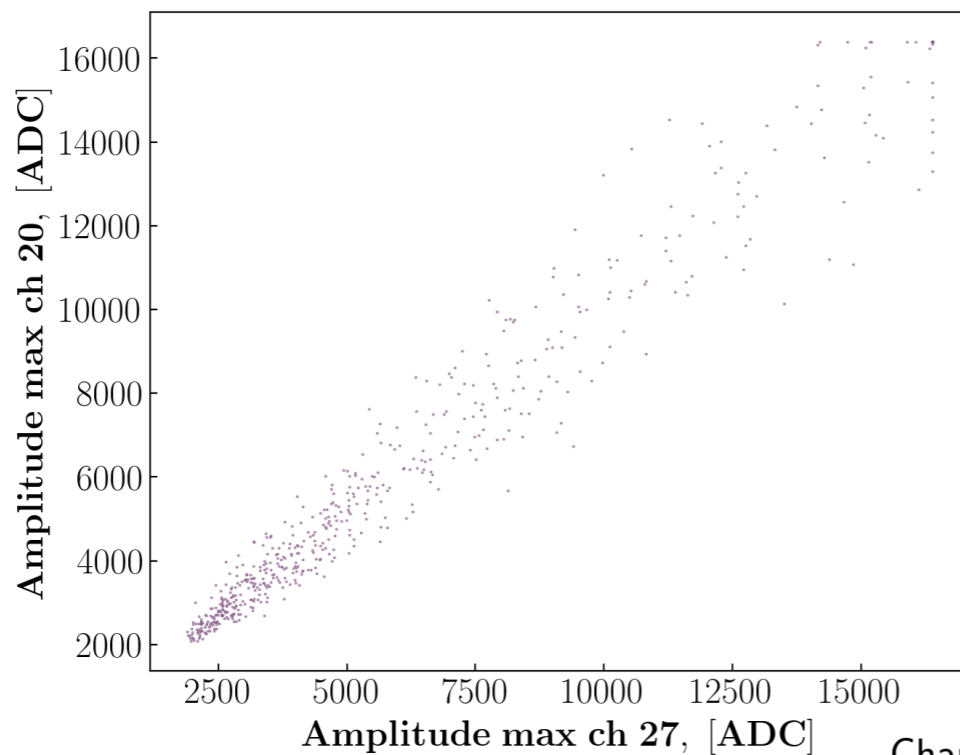

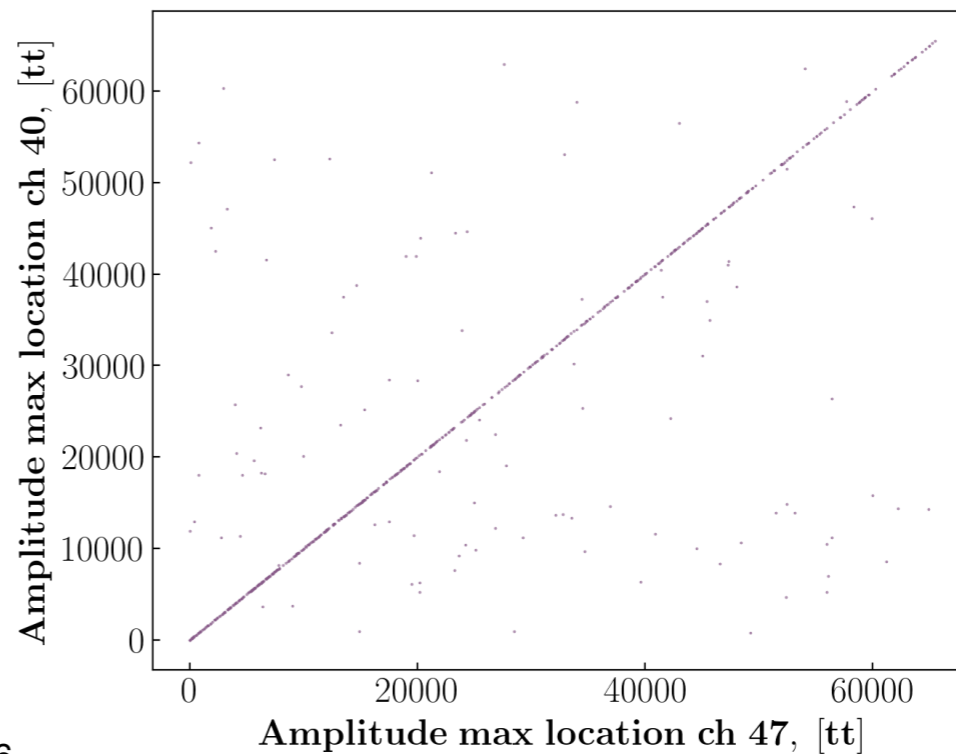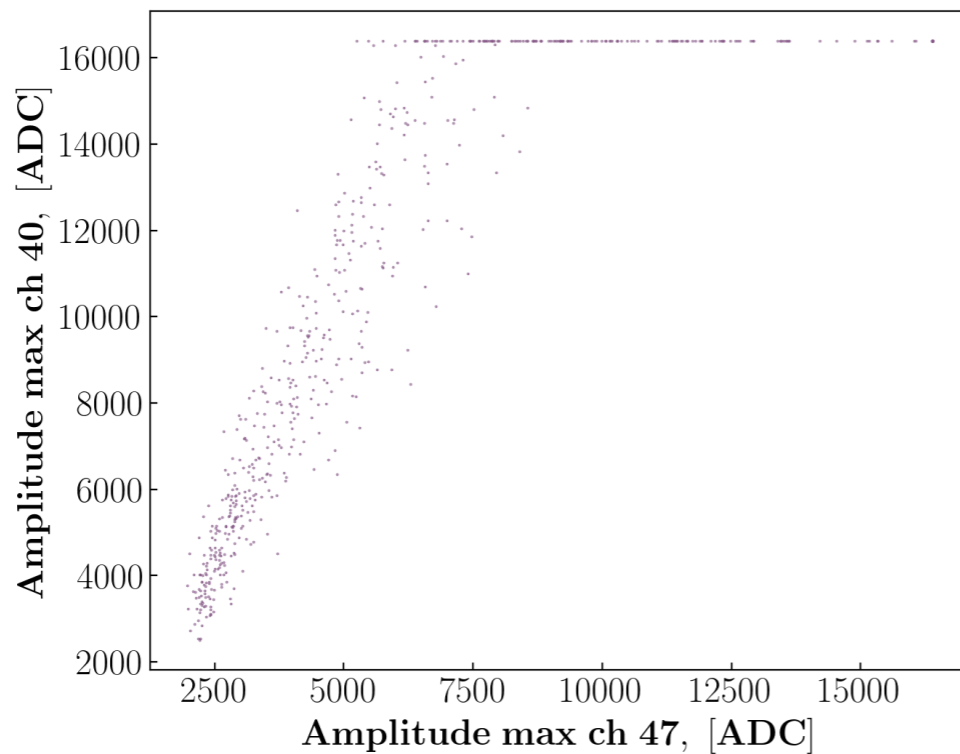Run 25034 Record 36

Run 25034 Record 15

Module channels

Channels 0-7

Channels 10-17

Module channels

Channels 40-47

Pulse shape discrimination
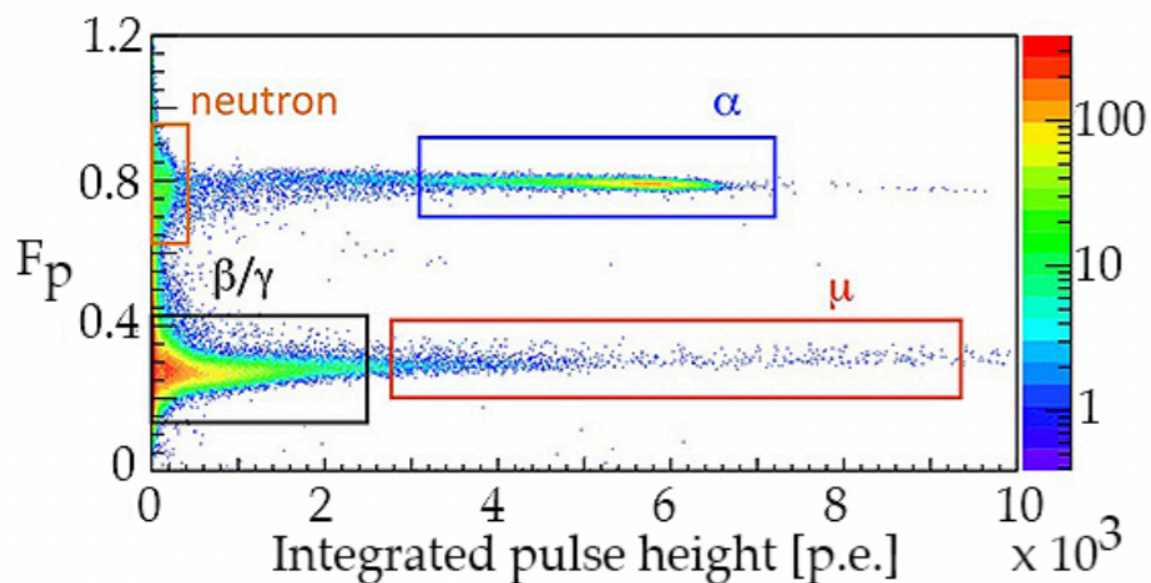
Main goal: Neutrons identification in DUNE with light Pulse Shape Discrimination (PSD) technique.

[*JINST 10 (2015) 08, P08002*]
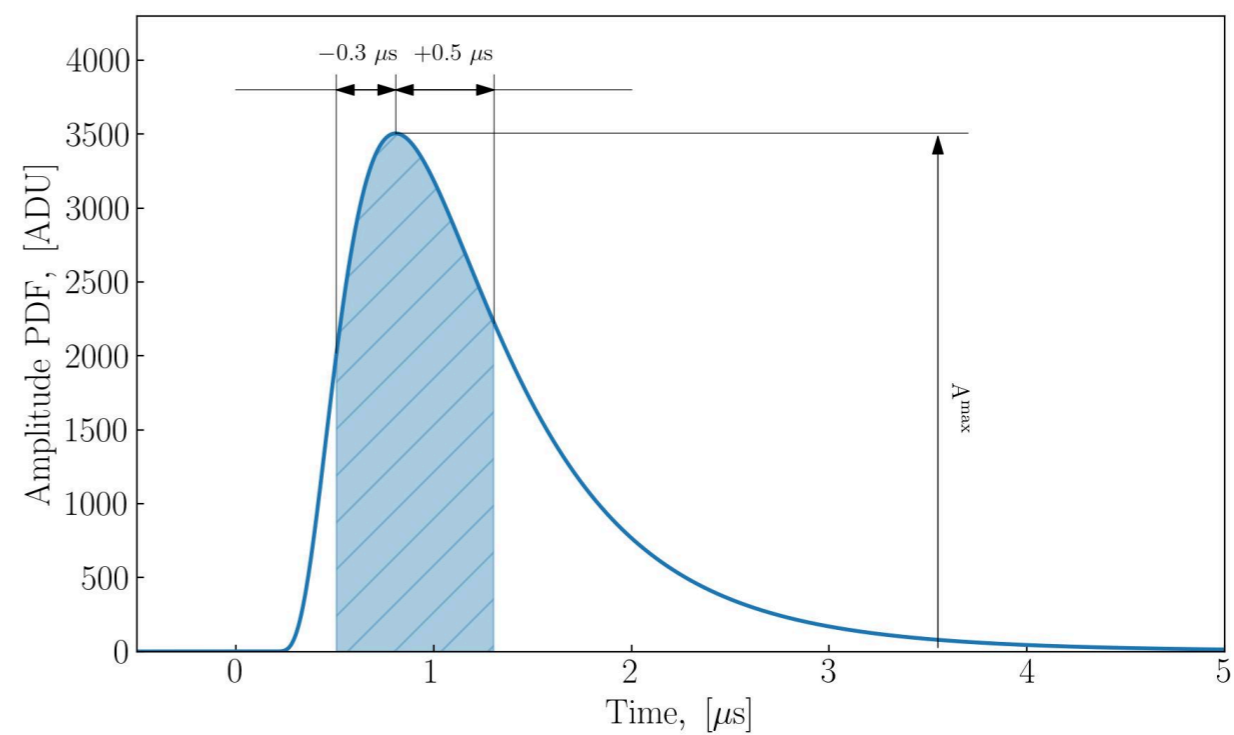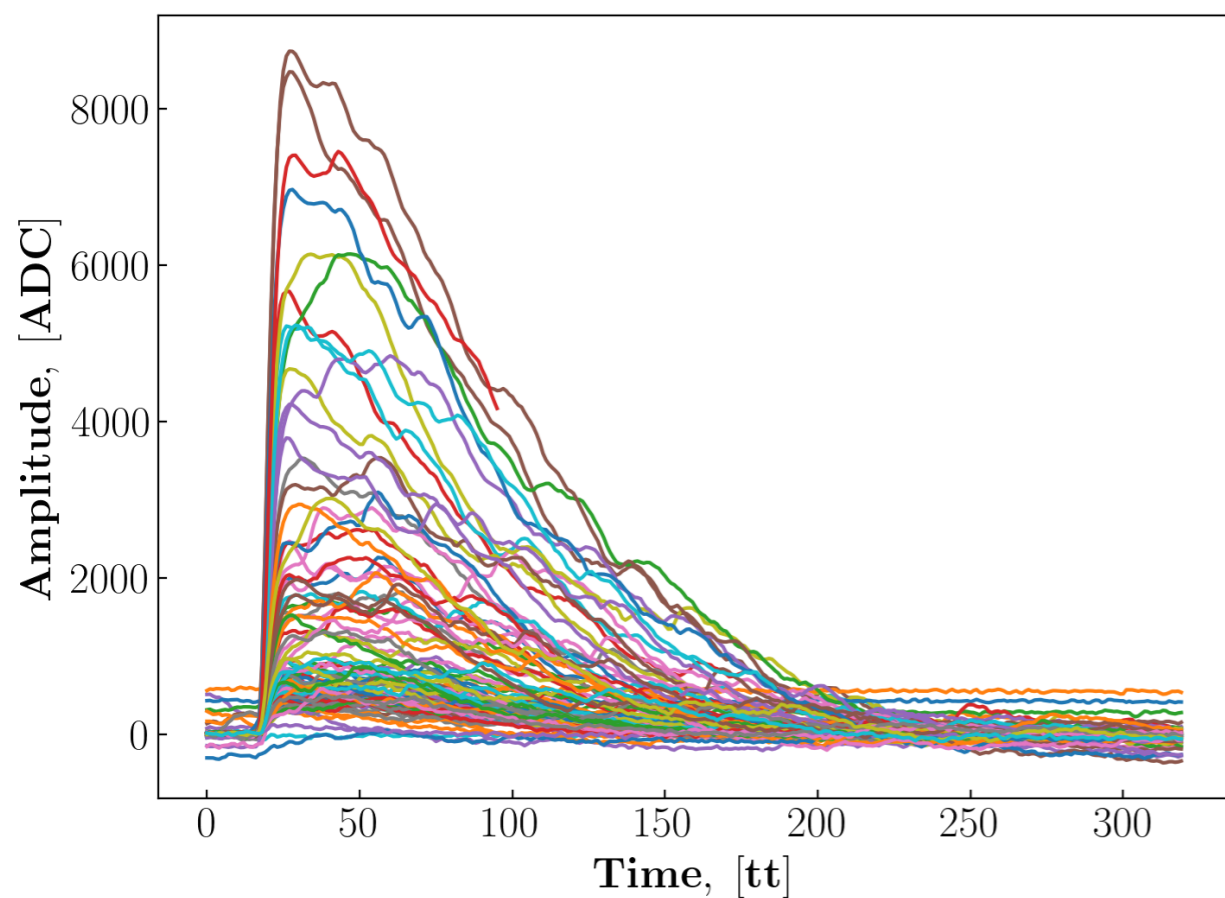[Phys. Rev. B **27**, 5279]
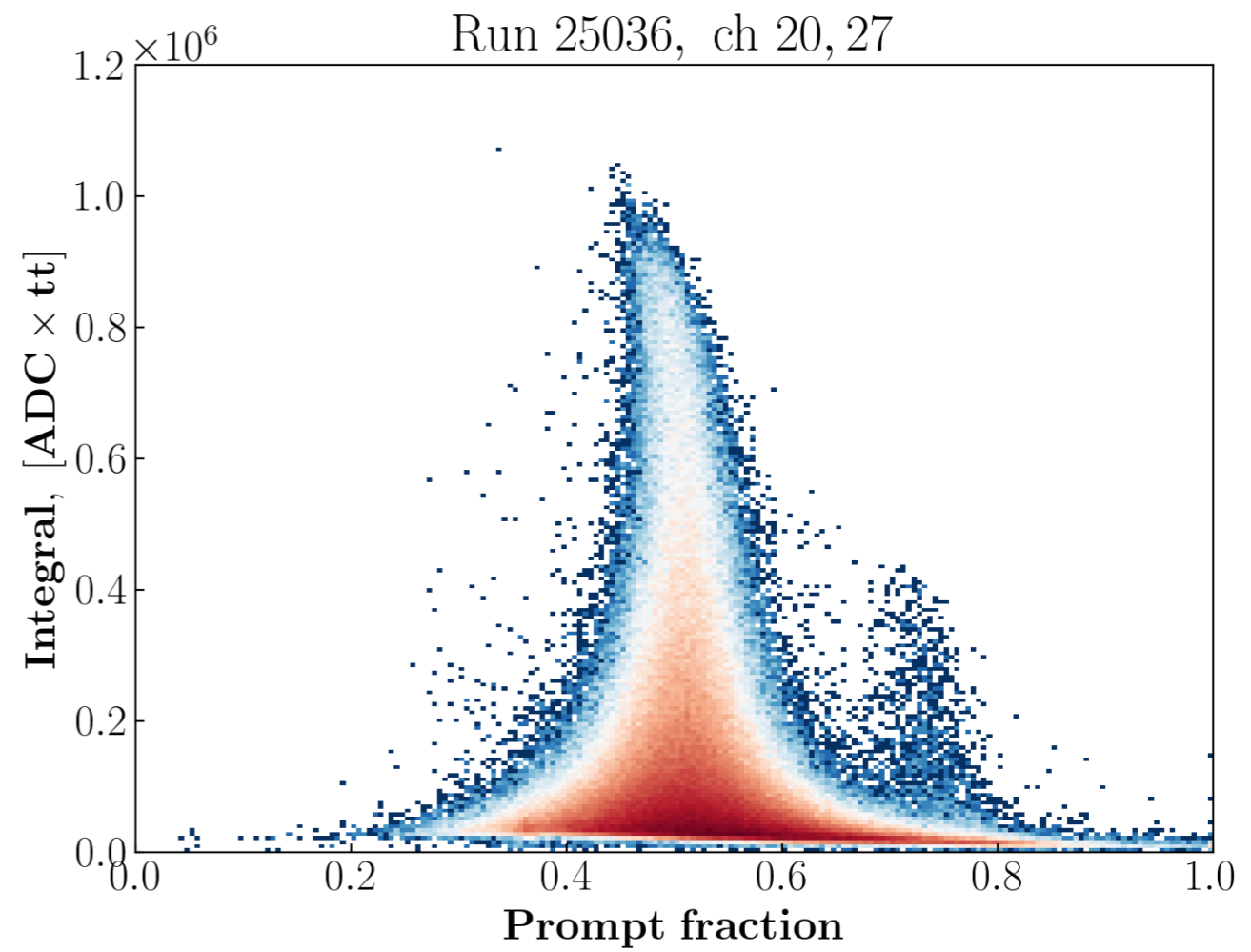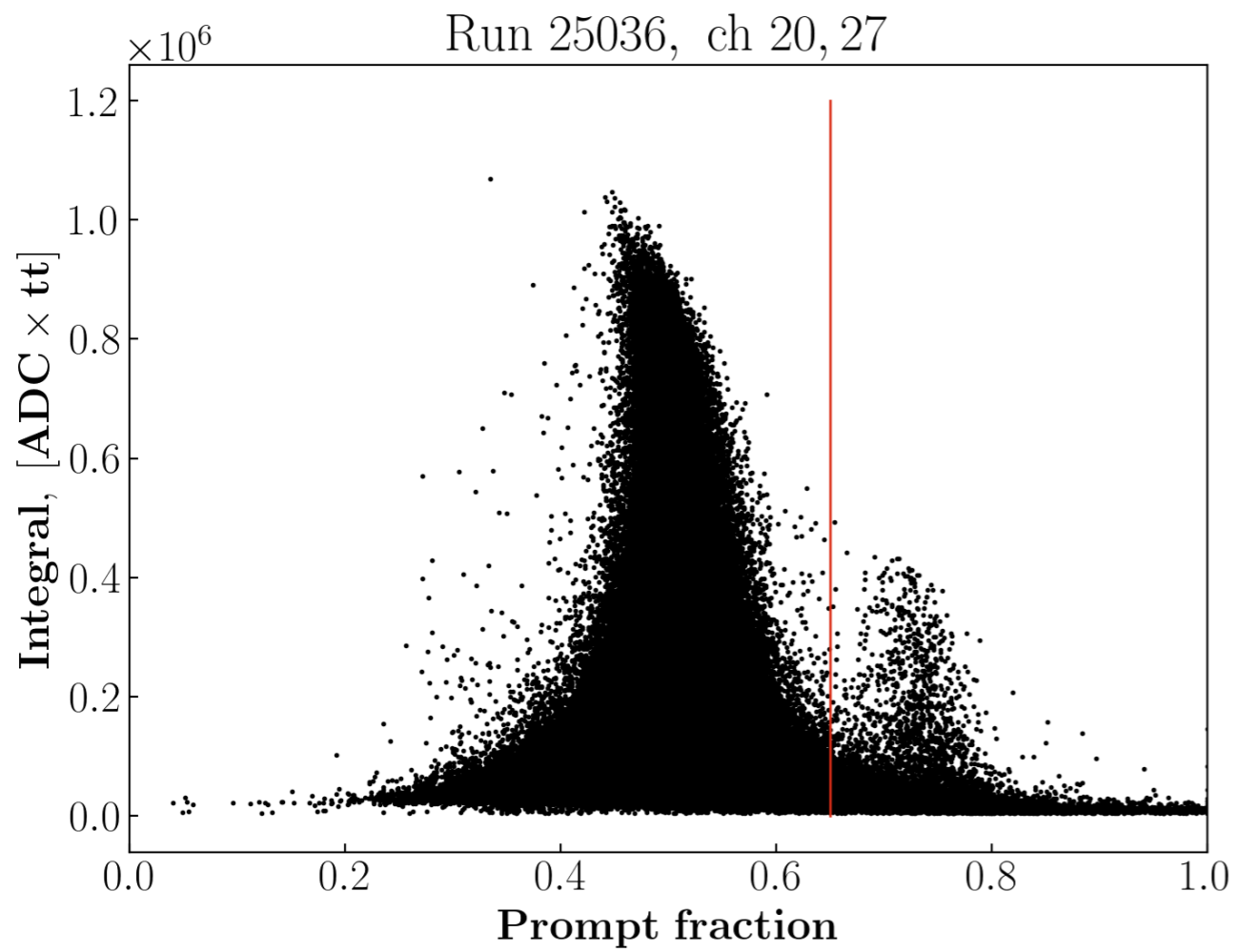[*JINST* 16 (2021) 09, P09027]
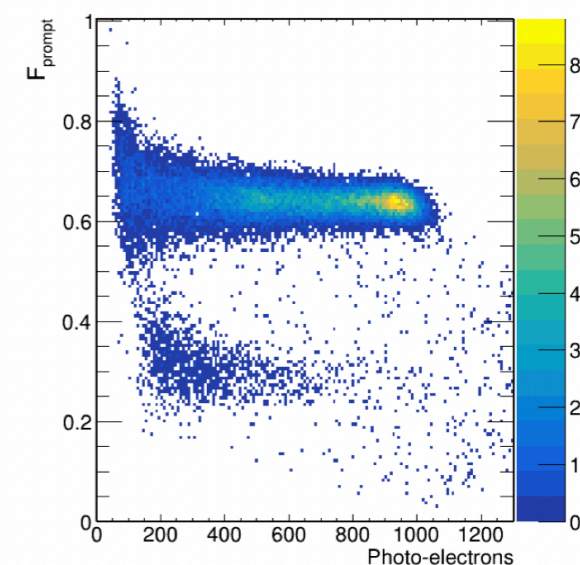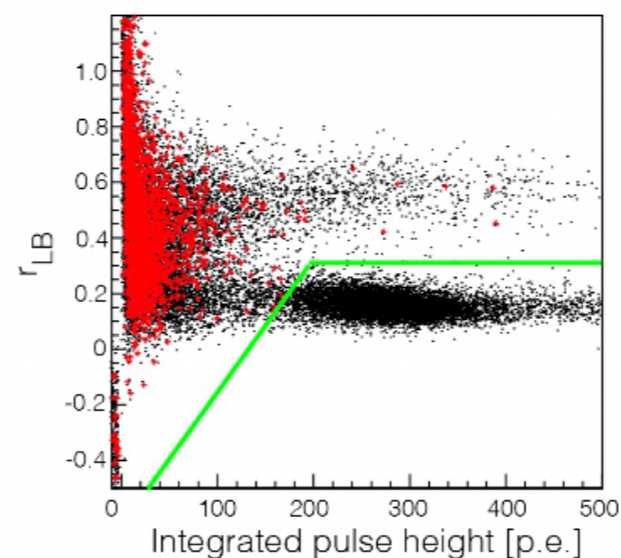
PNS data: first look

Prompt light fraction $- F'_p = \dfrac{\int_{t_{\max}-0.3}^{t_{\max}+0.5} A(t)dt}{\int_{t_0}^{t} A(t)dt}$;

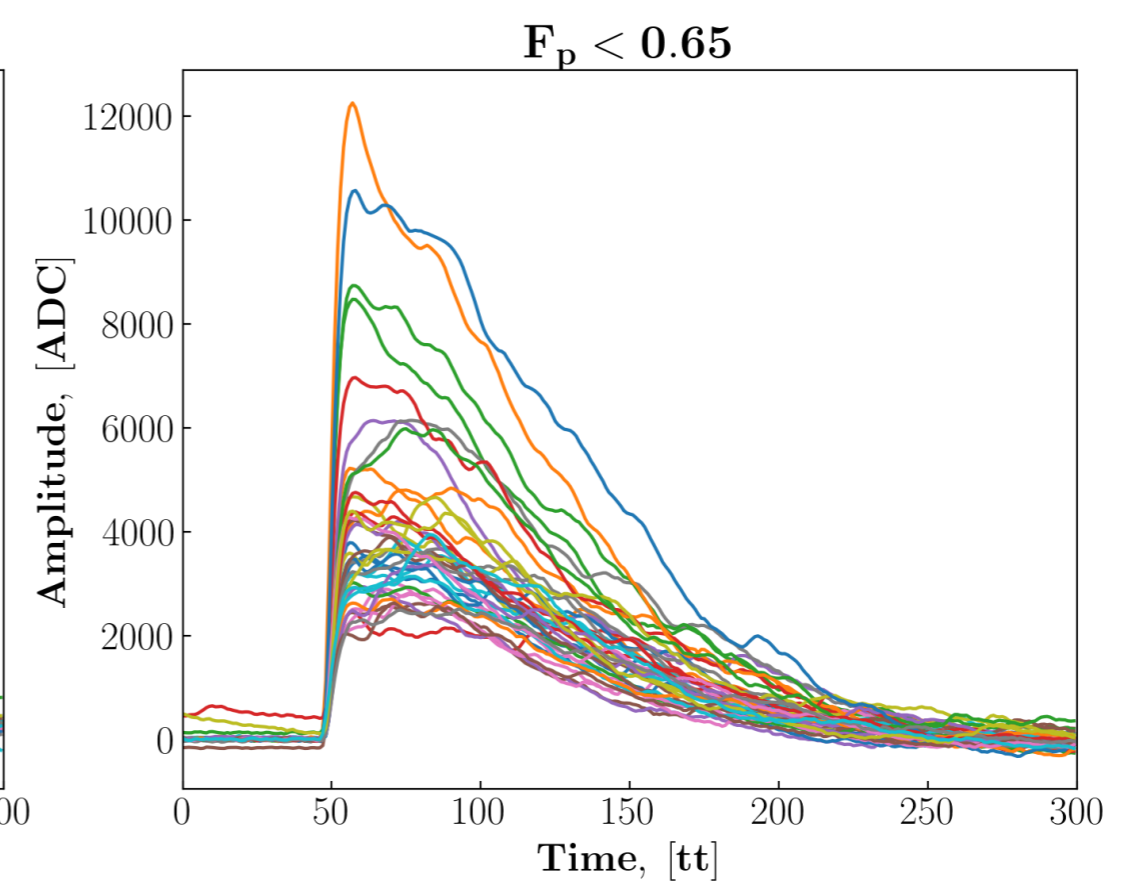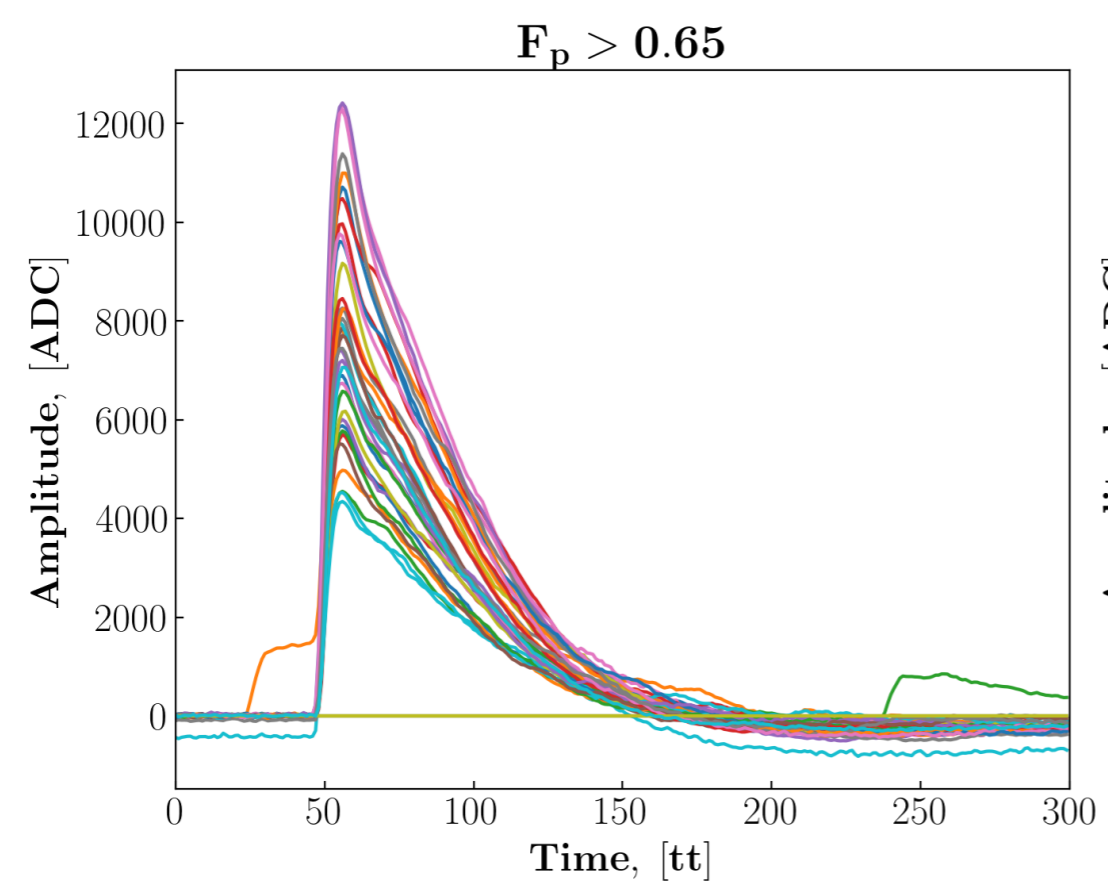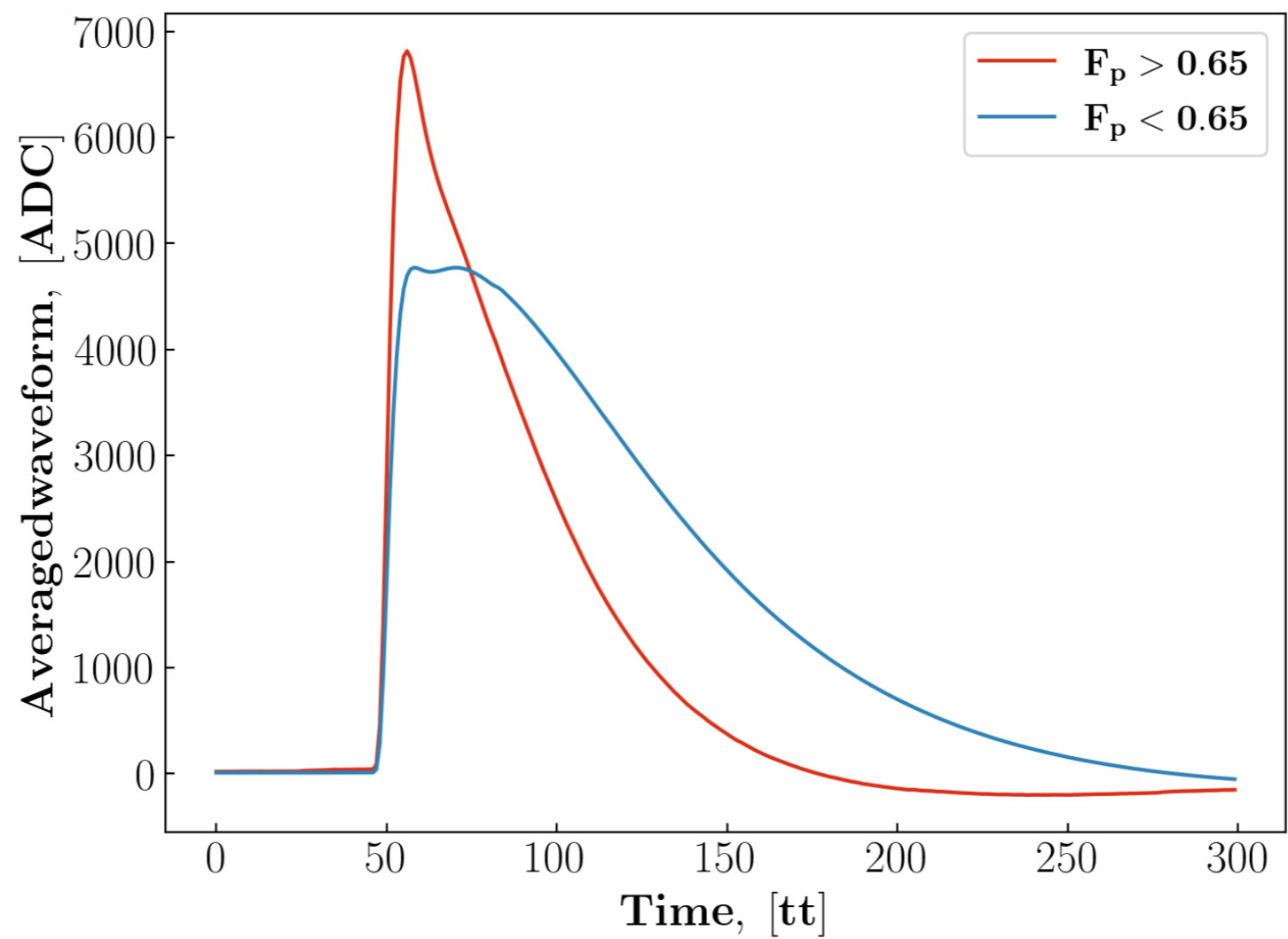Full run 25036. Waveforms are pedestal subtracted and aligned by the rising edge.
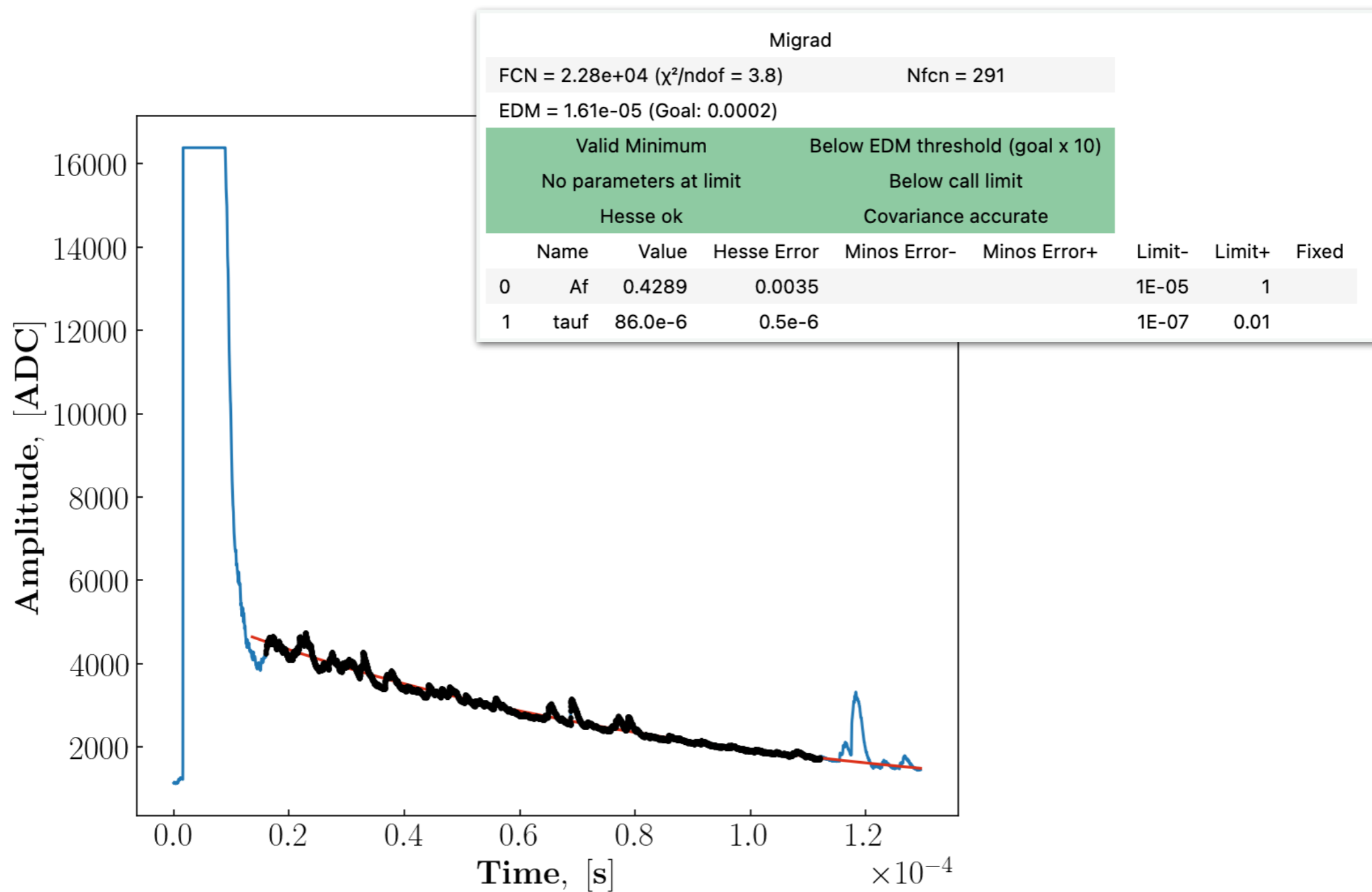
FPS plots

Waveforms

Waveform types

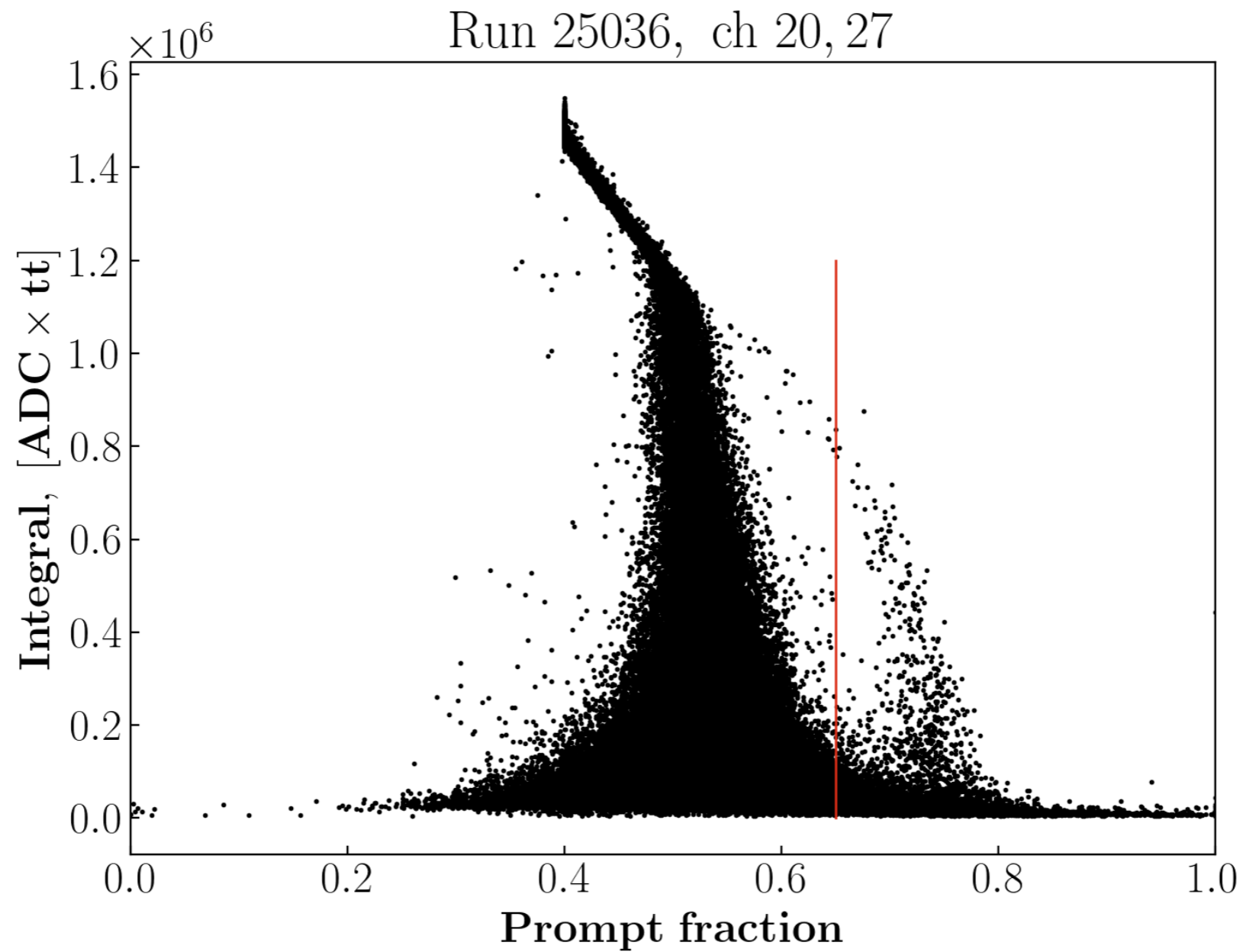Waiting for the overnight cosmic run to find out of this effect appear while PNS is off.

Tail fit

Allowing saturated waveforms

Run 25036, ch 20, 27

Run overview

Run No	Configuration	Trigger	Length
25036	TPC+PDS	4Hz	5h
25050	TPC+PDS	4Hz	5h
25068	TPC+PDS	4Hz	4h
25071	TPC+PDS	4Hz	3h
25080	PDS	40Hz	4h

PDS-wise run 25080 has most of the data.

Cosmic runs not mentioned here, but data was taken every night in TPC+PDS mode (1Hz).