

Noise filter paper prepare

Xin Qian, Xuyang Ning, Jay Hyun Jo

PDHD&PDVD data prepare

Detector	Run	Date (UTC)	Condition	FE Gain (mV/fC)	Events	Notes
HD	run027380	2024-06-22	-7 GeV beam	14.0	8	2 FEMB-saturation events
HD	run027409	2024-06-24	cosmic	14.0	9	1 FEMB-saturation event
HD	run027425	—	FEMB noise	14.0	9	9 FEMB-saturation events
HD	run027980	2024-07-11	cosmic	7.8	5	
HD	run029107	2024-09-06	1 GeV beam	7.8	5	
VD	run039252	2025-08-29	8.000 GeV beam	7.8	5	
VD	run039253	2025-08-30	8 GeV beam	7.8	5	
VD	run039324	2025-09-05	1 GeV beam	7.8	11	
VD	run040475	2025-11-13	cosmic	7.8	11	E-field 705 V/cm

 **dunecat**

DatasetsRunsQuery

★ Saved queries   Sign out

Browse datasets

Pick a sub-detector, then open a dataset to see its files.

ProtoDUNE-HD 16,745ProtoDUNE-VD 12,131DUNE FD-HD 1,713DUNE FD-VD 1,854More detectors... 

ProtoDUNE-HD [wiki](#) 

DATASETS16,745FILES8,055,943

NAMESPACES

hd-protodunehd-protodune-det-reco

NAMESPACEAll TIERAll FILE TYPEAll 

Official onlyWith metadata

Filter dataset name – e.g. cosmic or beam_2024

Refresh

Fetches 7d ago

Showing 1 – 100 of 16,745

← Prev

Page 1 / 168

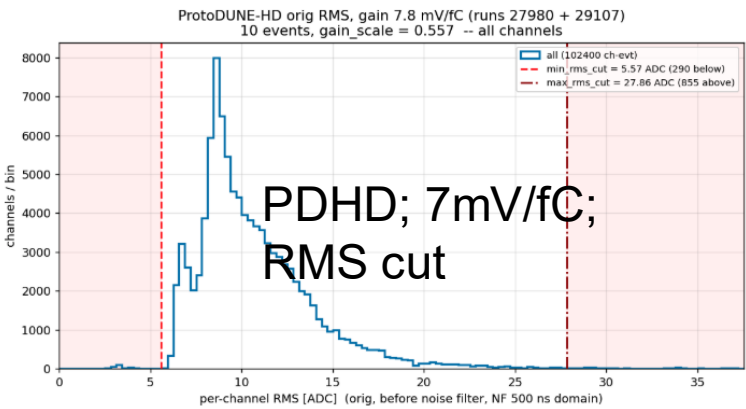
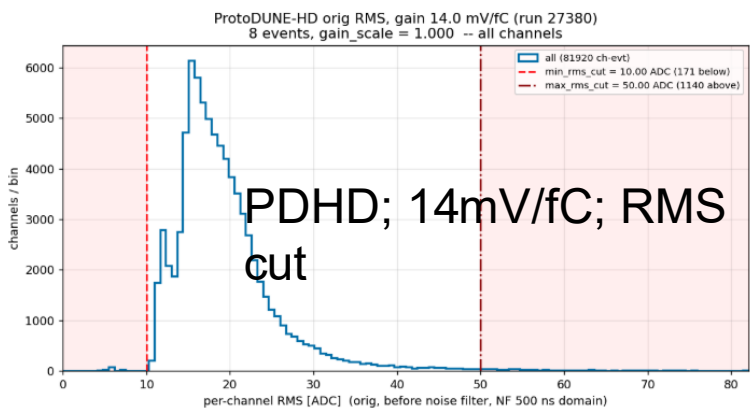
Next →

DATASET	RUNS	FILES	TIER	UPDATED
hd-protodune:hd-protodune_raw_31475	–	8	–	2025-05-19
hd-protodune:hd-protodune_raw_31185	–	8	–	2025-05-19
hd-protodune:hd-protodune_raw_32256	–	8	–	2025-05-19
hd-protodune:hd-protodune_25626	–	12	–	2024-05-04
hd-protodune:hd-protodune_28275	–	6	–	2024-07-29
hd-protodune:hd-protodune_32163	–	787	–	2024-10-25
hd-protodune:hd-protodune_raw_32359	–	8	–	2025-05-19

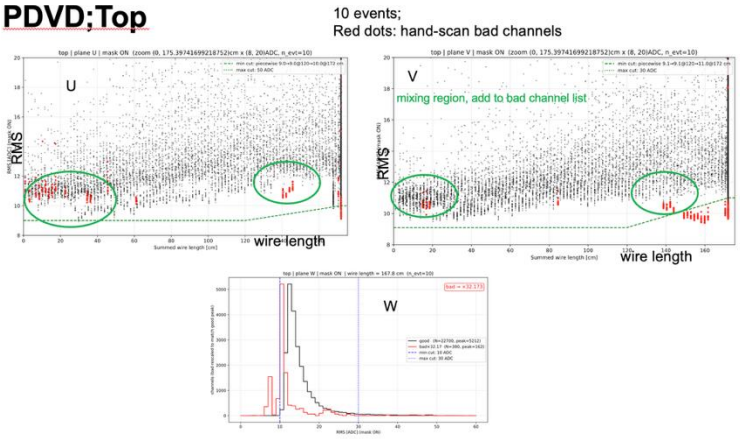
Chao develop a really nice website to search data multiple ways to search as you want. easy and fast to get the information.

3

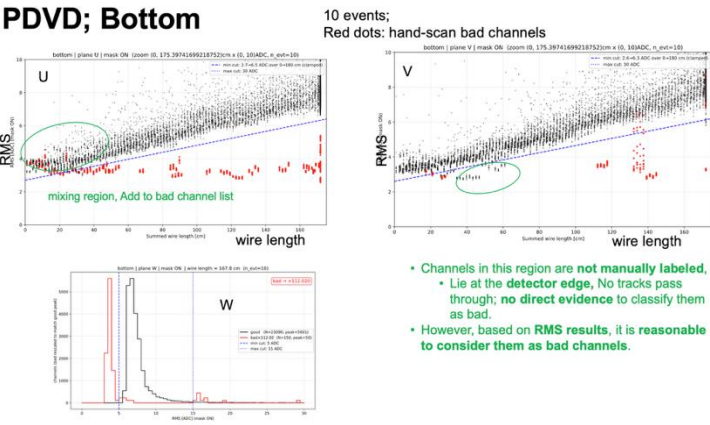
Bad channel rate:



PDVD; Top



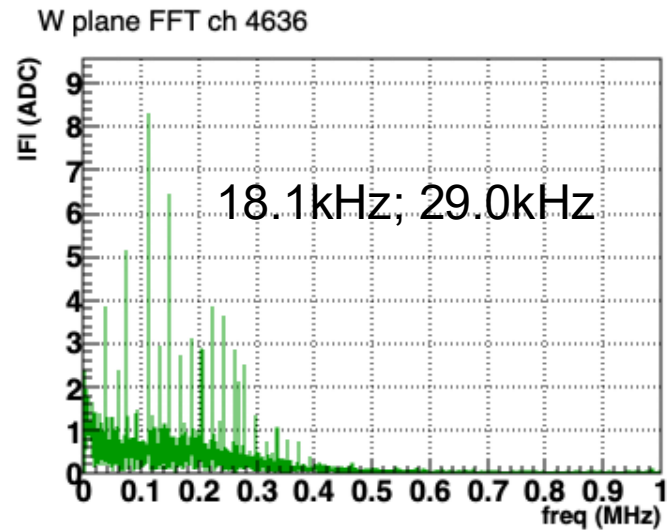
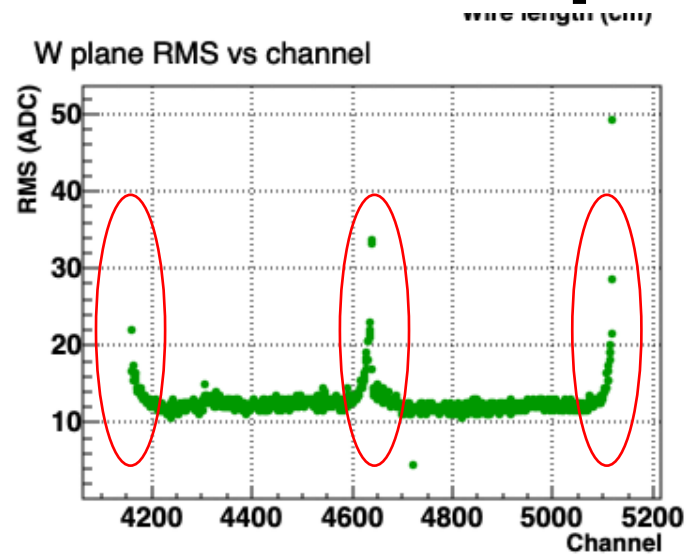
PDVD; Bottom



Bad channel rate: Bad channel list+ RMS cut:

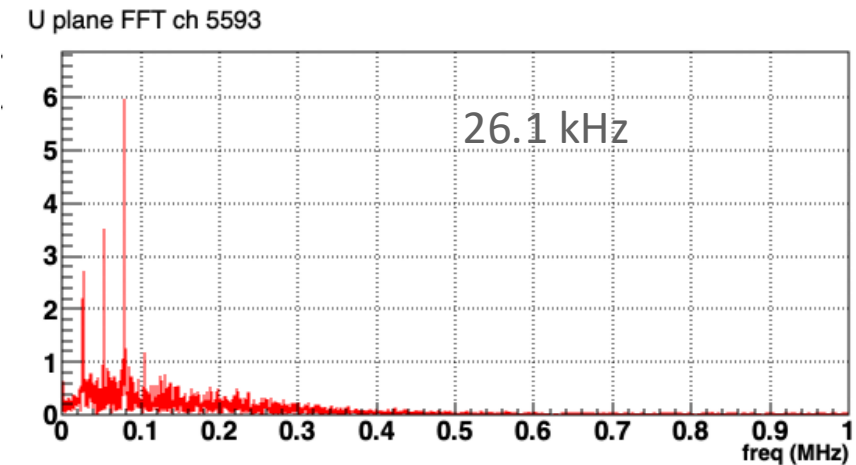
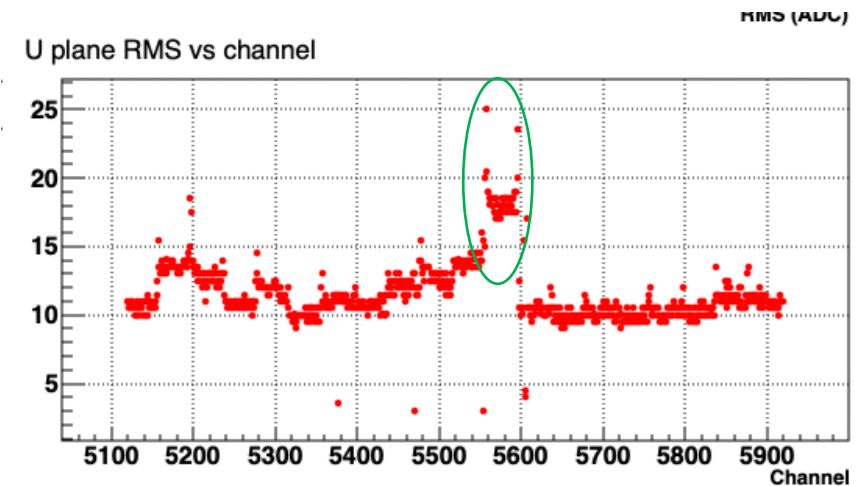
Detector	Total ch	Labeled bad:	Overall (labeled + RMS cut)
PDHD	10,240	33 (0.322 %)	50.5 avg (0.493 %)
PDVD	24,576	307 (1.249 %)	340.5 avg (1.385 %)

Harmonic Frequency in PDHD



run027409

2024-06-24

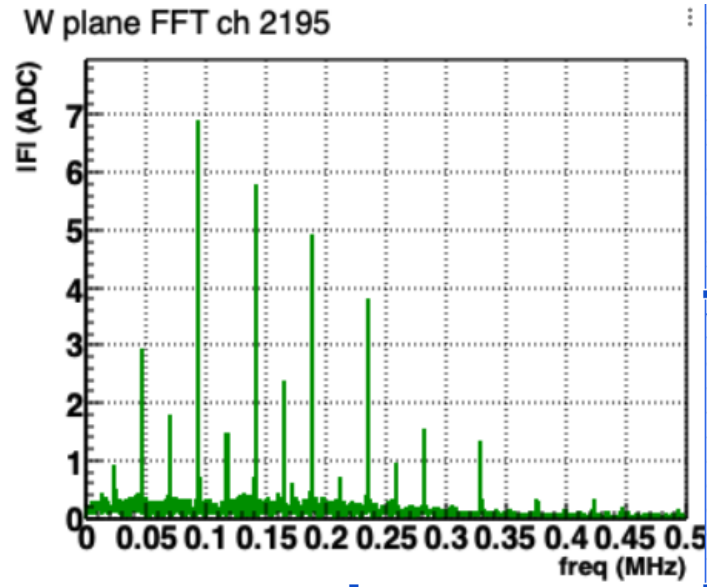


run 29107

2024-09-06

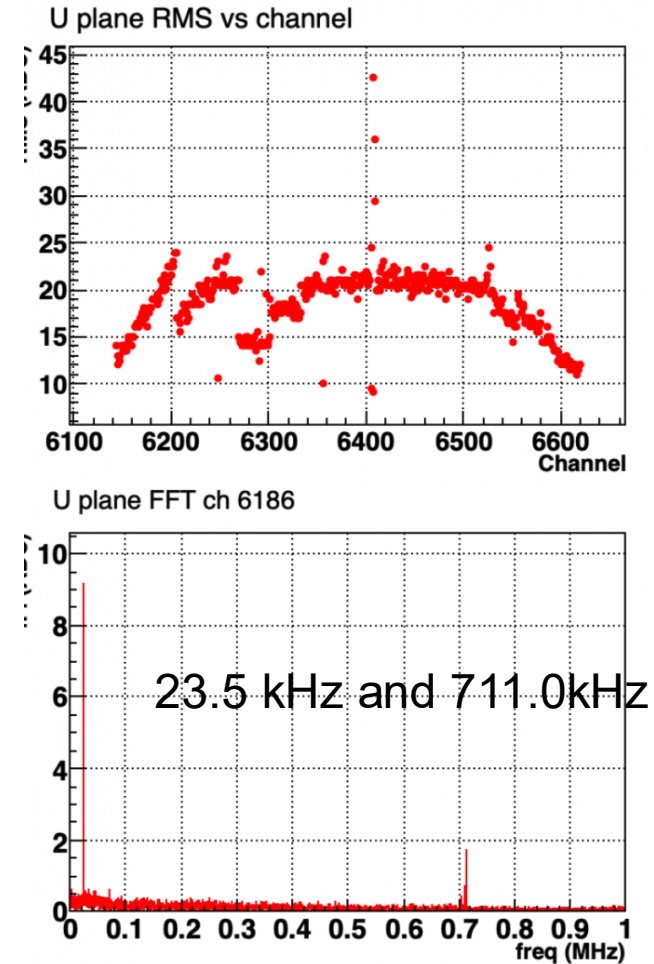
Harmonic Frequency in PDVD

Bottom:



about 25kHz,
known and is investigated by onsite CE
“This is primarily on the channels near the
CRU borders, which we think is from the two
CRUs not being fully aligned and grounded
together”

Top:



FEMB saturation noise rate:

Scan result:

Run	Date	Type	Gain	Total # of Scanned triggers	Total # of identified FEMB "noise"	# in APA 1	# in APA 2	# in APA 3	# in APA 4
27380	06/22	beam	14mV/fC	565	37	3	10	13	11
27355	06/21	beam	14mV/fC	1741	164	28	47	39	50
28052	07/18	beam	7.8mV/fC	413	7	0	4	2	1
28084	07/20	cosmic	14mV/fc	1271	136	14	46	37	29

Summary:

Gain	Runs	Scanned triggers	FEMB-noise triggers	Rate
14 mV/fC	27380, 27355, 28084	3,577	337	9.42 %
7.8 mV/fC	28052	413	7	1.69 %

Ongoing plans

- Noise filter:
 - Summary slides report in DRA
 - next week
 - Draft the performance paper for noise filter.
- Signal processing:
 - summary update and report in DRA
 - signal processing performance paper
 - L1SP technical paper
- Test and push all update to official chain.