

# ProtoDUNE-VD data/sim production

Yoann Kermaïdic

DUNE production meeting

Jan 23<sup>th</sup>, 2025

# Context

## Filling is completed

The nominal level was reached on Monday 20<sup>th</sup> around noon.

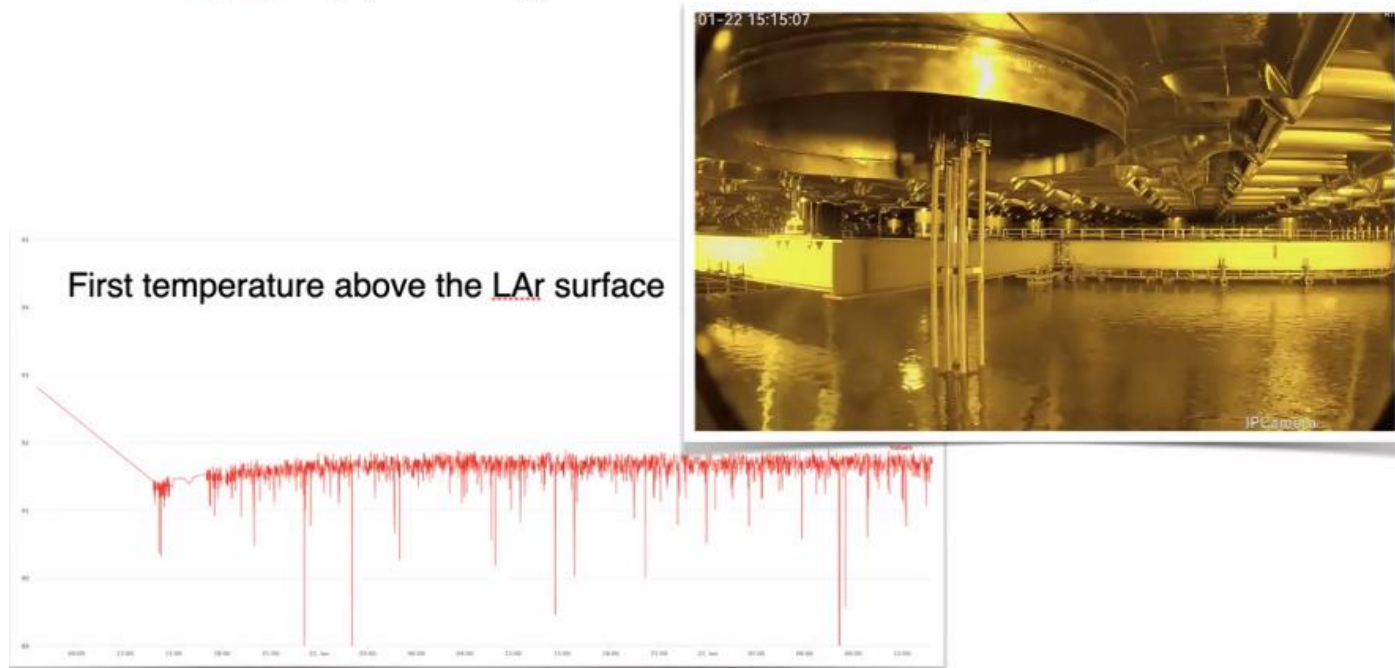
Condensation from NP04 was stopped.

Boil-off from the chimneys was sent to re-condensation.

LAr level is stable since then (from temperature sensors).

LAr recirculation and purification on and stable.

Second LAr pump (for back up) installed last week and ready to be put in operation.



# Jan, 09<sup>th</sup> to-do list

- **I got access to the keepup process scripts Jake used for PDHD (crontab, bash, justin commands, ...)**
  - Need to adapt it to PDHD
  - Run tests on Dec. 2024 files
  - Add/test TDE & PDS stream decoders when DAQ will produce complete files (ongoing discussion with Tom Junk)
- **Prepare simulations proposal of:**
  - Cosmics
  - Radiologicals
  - Beam
- Also here, Jake's scripts developed for PDHD are available and could in principle be adapted and reused

# Status now

- I got access to the keepup process scripts Jake used for PDHD (crontab, bash, justin commands, ...)
  - Need to adapt it to PDHD
  - Run tests on Dec. 2024 files
  - Add/test TDE & PDS stream decoders when DAQ will produce complete files – channel mapping getting final
- Prepare simulations proposal of:
  - Cosmics
  - Radiologicals
  - Beam
- Also here, Jake's scripts developed for PDHD are available and could in principle be adapted and reused

# Keepup-process

- I got access to the keepup process scripts Jake used for PDHD (crontab, bash, justin commands, ...)
  - Jobscript updated to PDVD case
  - Interactive tests with automated metacat query done
    - Works out of the box on Jan 2025 files =)
  - Need to test the grid submission but no forseen showstopper
  - There will be a crontab job running to look for new files twice a day (or with higher repetition if needed/possible)
    - Test planned when the FNAL system will be back online

# Keepup-process

- I got access to the keepup process scripts Jake used for PDHD (crontab, bash, justin commands, ...)
  - Jobscript updated to PDVD case
  - Interactive tests with automated metacat query done
    - Works out of the box on Jan 2025 files =)
  - Need to test the grid submission but no forseen showstopper
  - There will be a crontab job running to look for new files twice a day (or with higher repetition if needed/possible)
    - Test planned when the FNAL system will be back online

# ProtoDUNE-VD raw dataset

- A lot of BDE CRP noise monitoring data taken at the moment

## Datasets

[create](#)

Namespace

Name Match

Name	Namespace	Creator	Created	Owner	Flags	Files	Children	Subset
<a href="#">vd-protodune_35327</a>	<a href="#">vd-protodune</a>	<a href="#">dunepro</a>	2025-01-22 02:57:10 UTC	user <a href="#">dunepro</a>		280		
<a href="#">vd-protodune_35325</a>	<a href="#">vd-protodune</a>	<a href="#">dunepro</a>	2025-01-21 10:12:16 UTC	user <a href="#">dunepro</a>		147		

- Test crontab running on it twice a day every 12 hours – works well

```
[dunepro@dunegpvm10 ~]$ crontab -l  
MAILTO=yoann.kermaidic@ijclab.in2p3.fr'
```

```
40 3,15 * * * /cvmfs/oasis.opensciencegrid.org/mis/apptainer/current/bin/apptainer exec -B /cvmfs,/exp,/nashome,/pnfs/dune,/opt,/run/user,/etc/hostname,/etc/hosts,/etc/krb5.conf --ipc --pid /cvmfs/singularity.opensciencegrid.org/femilab/fnal-dev-sl7:latest/exp/dune/app/users/ykermaid/scripts/keepup/submit_keepup.sh usertests 2>&1 | tee -a /exp/dune/app/users/ykermaid/scripts/keepup/keepup_cronlogs.txt
```

# ProtoDUNE-VD keepup

- For large datasets processing, see workflows 4798, 4816, 4830

## Workflow 4816

Description	PDVD Keepup (2025-01-22T1200 -- 2025-01-22T2400)
State	running
Message	Moved to running state by justIN
MQL	files where created_timestamp >= 2025-01-22T1200 and created_timestamp < 2025-01-22T2400 and core.run_type=vd-protodune and core.file_type=detector and core.data_tier=raw and core.data_stream in (physics, cosmics)
Scope	usertests
HTCondor Group	group_dune
Finding	every 1 hour(s) to 2025-01-24 23:59:59
Next find	2025-01-23 14:49:01
Submitted by	ykermaid@fnal.gov
Created	2025-01-22 21:40:07
Submitted	2025-01-22 21:40:07
Started	2025-01-22 21:40:26
Finished	
Events for this workflow	

## File states per stage

Stage ID	Files	Finding	Unallocated	Allocated	Outputting	Processed	Not found	Failed
1	120	0	0	0	0	120	0	0

## Job states per stage

Stage	Total	Submitted	Started	Processing	Outputting	Finished	Notused	Aborted	Stalled	Jobscrip error	Outputting failed	None processed
1	213	0	0	0	0	205	0	0	8	0	0	0



# ProtoDUNE-VD keepup

- For large datasets processing, see workflows 4798, 4816, 4830
- Currently produced under ‘usertests’ scope but will move it to ‘protodune-det-reco’ in the next days (S. Timm taking care)

## Dataset usertests:w4798s1p1-DUNE\_CERN\_EOS

Creator: dunepro  
Create timestamp: 2025-01-22 04:15:02 UTC  
Updated by:  
Update timestamp:  
Frozen: no  
Monotonic: no  
Metadata: 

Parameter	Value
dune.workflow	{'mql': 'files where created_timestamp >= 2025-01-22T0000 and created_timestamp < 2025-01-22T1200 and core.run_type=vd-protodune and core.file_type=detector and core.data_tier=raw and core.data_stream in (physics, cosmics)', 'user': 'ykermaid@fnal.gov', 'stage_id': 1, 'rss_bytes': 4193255424, 'pattern_id': 1, 'processors': 1, 'workflow_id': 4798, 'file_pattern': '*_pdvd_bde_reco.root', 'wall_seconds': 18000, 'jobscript_image': '/cvmfs/singularity.opensciencegrid.org/fermilab/fnal-wn-sl7:latest'}

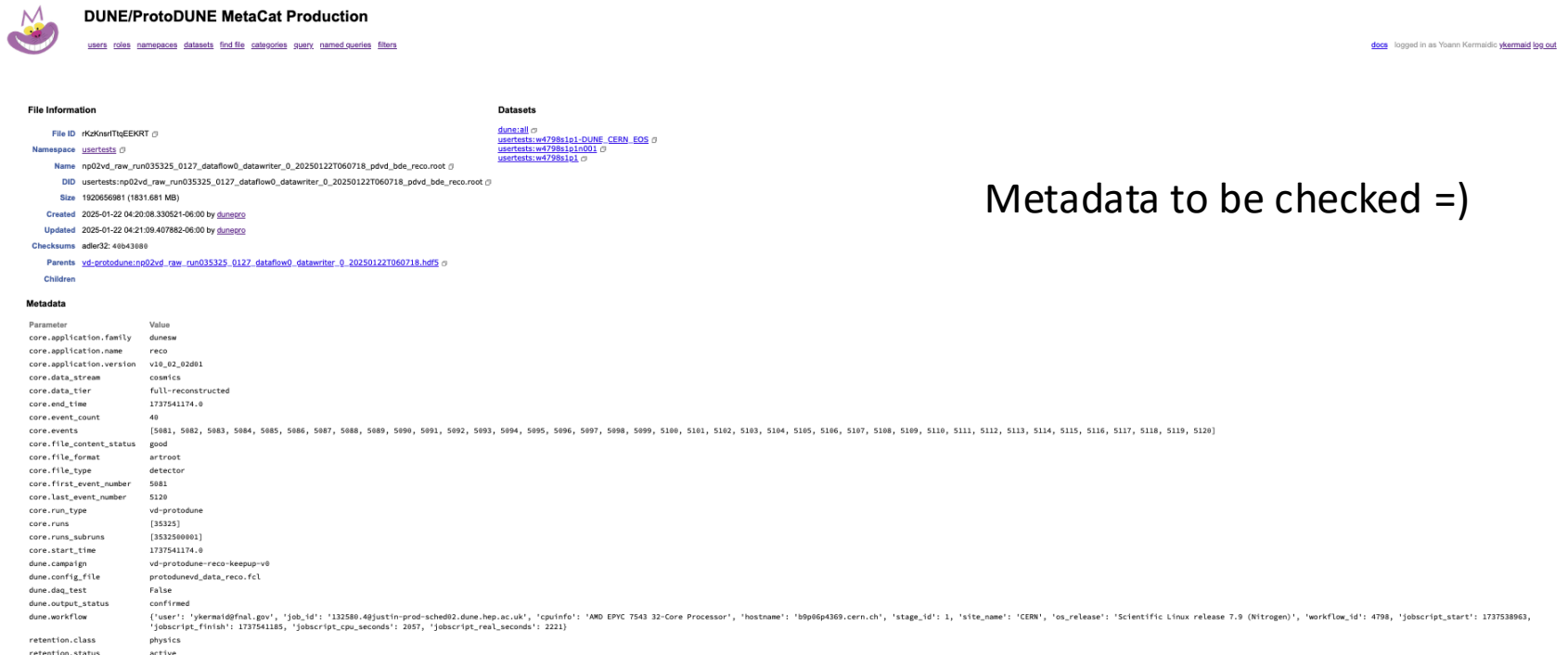
  
Immediate children:  
Subsets:  
Immediate parents:  
Ancestors:  
File metadata requirements

### 44/44 (approximate) files

usertests:np02vd\_raw\_run035325\_0127\_dataflow0\_datawriter\_0\_20250122T060718\_pdvd\_bde\_reco.root [🔗](#)  
usertests:np02vd\_raw\_run035325\_0128\_dataflow0\_datawriter\_0\_20250122T061358\_pdvd\_bde\_reco.root [🔗](#)  
usertests:np02vd\_raw\_run035325\_0129\_dataflow0\_datawriter\_0\_20250122T062038\_pdvd\_bde\_reco.root [🔗](#)

# ProtoDUNE-VD keepup

- For large datasets processing, see workflows 4798, 4816, 4830
- Currently produced under 'usertests' scope but will move it to 'protodune-det-reco' in the next days (S. Timm taking care)



**DUNE/ProtoDUNE MetaCat Production**

users notes namespaces datasets find file categories query named queries filters

docs logged in as Yoann Kermaïdic: ykermaid@brl.eu

**File Information**

File ID rKzKnsrTtoEEKRT ◊

Namespace usertests ◊

Name np02vd\_raw\_run035325\_0127\_dataflow0\_datawriter\_0\_20250122T060718\_pdvd\_bde\_reco.root ◊

DID usertests:np02vd\_raw\_run035325\_0127\_dataflow0\_datawriter\_0\_20250122T060718\_pdvd\_bde\_reco.root ◊

Size 1920656981 (1831.681 MB)

Created 2025-01-22 04:20:08.330521-06:00 by dunesro

Updated 2025-01-22 04:21:09.407892-06:00 by dunesro

Checksums adler32: 49b43888

Parents vd-erotodune:np02vd\_raw\_run035325\_0127\_dataflow0\_datawriter\_0\_20250122T060718.bdfs ◊

Children

**Datasets**

dune:all ◊

usertests:w4798@joi-DUNE\_CERN\_EOS ◊

usertests:w4798@joi-n001 ◊

usertests:w4798@joi ◊

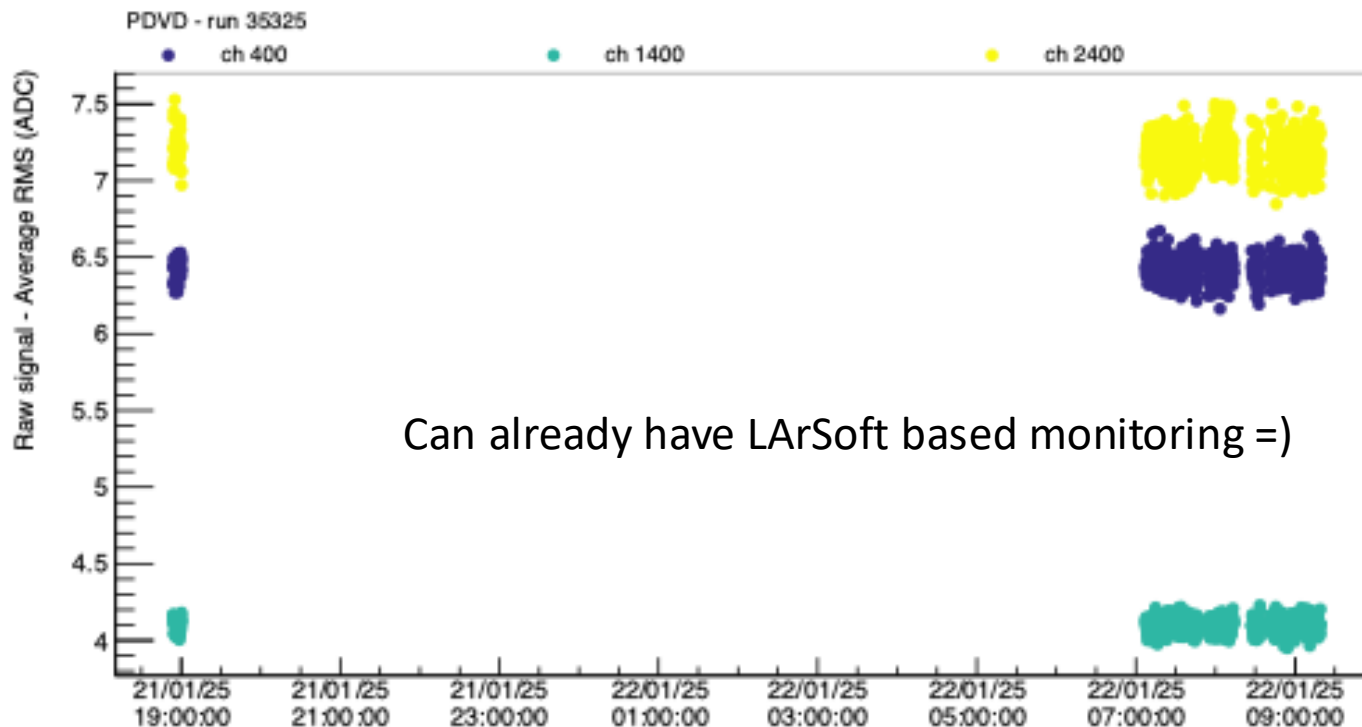
**Metadata**

Parameter	Value
core.application_family	dunesw
core.application_name	reco
core.application_version	v18_02_02d01
core.data_stream	cosmtcs
core.data_tier	full-reconstructed
core.end_time	1737541174.0
core.event_count	49
core.events	[5881, 5882, 5883, 5884, 5885, 5886, 5887, 5888, 5889, 5890, 5891, 5892, 5893, 5894, 5895, 5896, 5897, 5898, 5899, 5900, 5901, 5902, 5903, 5904, 5905, 5906, 5907, 5908, 5909, 5910, 5911, 5912, 5913, 5914, 5915, 5916, 5917, 5918, 5919, 5920]
core.file_content_status	good
core.file_format	artroot
core.file_type	detector
core.first_event_number	5881
core.last_event_number	5920
core.run_type	vd-protodune
core.runs	[35325]
core.runs_subruns	[3532500001]
core.start_time	1737541174.0
dune.campaign	vd-protodune-reco-keepup-v0
dune.config_file	protodunevd_data_reco.fcl
dune.daq_test	False
dune.output_status	confirmed
dune.workflow	{'user': 'ykermaid@fnal.gov', 'job_id': '132580.48justin-prod-sched02.dune.hep.ac.uk', 'cpuinfo': 'AMD EPYC 7543 32-Core Processor', 'hostname': 'b9906p4369.cern.ch', 'stage_id': 1, 'site_name': 'CERN', 'os_release': 'Scientific Linux release 7.9 (Nitrogen)', 'workflow_id': 4798, 'jobscript_start': 1737538963, 'jobscript_finish': 1737541185, 'jobscript_cpu_seconds': 2857, 'jobscript_real_seconds': 2221}
retention.class	physics
retention.status	active

Metadata to be checked =)

# ProtoDUNE-VD keepup

- For large datasets processing, see workflows 4798, 4816, 4830
- Currently produced under 'usertests' scope but will move it to 'protodune-det-reco' in the next days (S. Timm taking care)



# ProtoDUNE-VD keepup

- For large datasets processing, see workflows 4798, 4816, 4830
- Currently produced under 'usertests' scope but will move it to 'protodune-det-reco' in the next days (S. Timm taking care)
- Added a new set of keepup reco FHICL files à la PDHD
  - [standard reco protodunevd keepup.fcl](#)
  - [standard reco stage1 protodunevd keepup.fcl](#)
  - Includes dedicated filename:  
*outputs.out1.fileName: "%ifb\_reco\_stage1\_%tc\_keepup.root"*
- **Need to organize ourselves to reach stable operations**  
(volunteers for checking justin, metadata, file prod. completeness)  
Jake remains in the loop + Jeremy(PhD@IJClab) + ...

# Simulation proposals

- Also here, Jake's scripts developed for PDHD are available and will be adapted and reused
- Samples
  - **Cosmics** (ready)  
[https://github.com/DUNE/dunesw/blob/develop/fcl/protodunevd/gen/gen\\_protodunevd\\_cosmics\\_radio.fcl](https://github.com/DUNE/dunesw/blob/develop/fcl/protodunevd/gen/gen_protodunevd_cosmics_radio.fcl)
  - **Radiologicals** (ready – using DUNE-FD activities)  
[https://github.com/DUNE/dunesw/blob/develop/fcl/protodunevd/gen/gen\\_protodunevd\\_allradio.fcl](https://github.com/DUNE/dunesw/blob/develop/fcl/protodunevd/gen/gen_protodunevd_allradio.fcl)
  - **Beam** (work to be done to adapt the PDHD one to PDVD)
- Had to verify Space Charge Effect but proposals document will be prepared as soon as possible