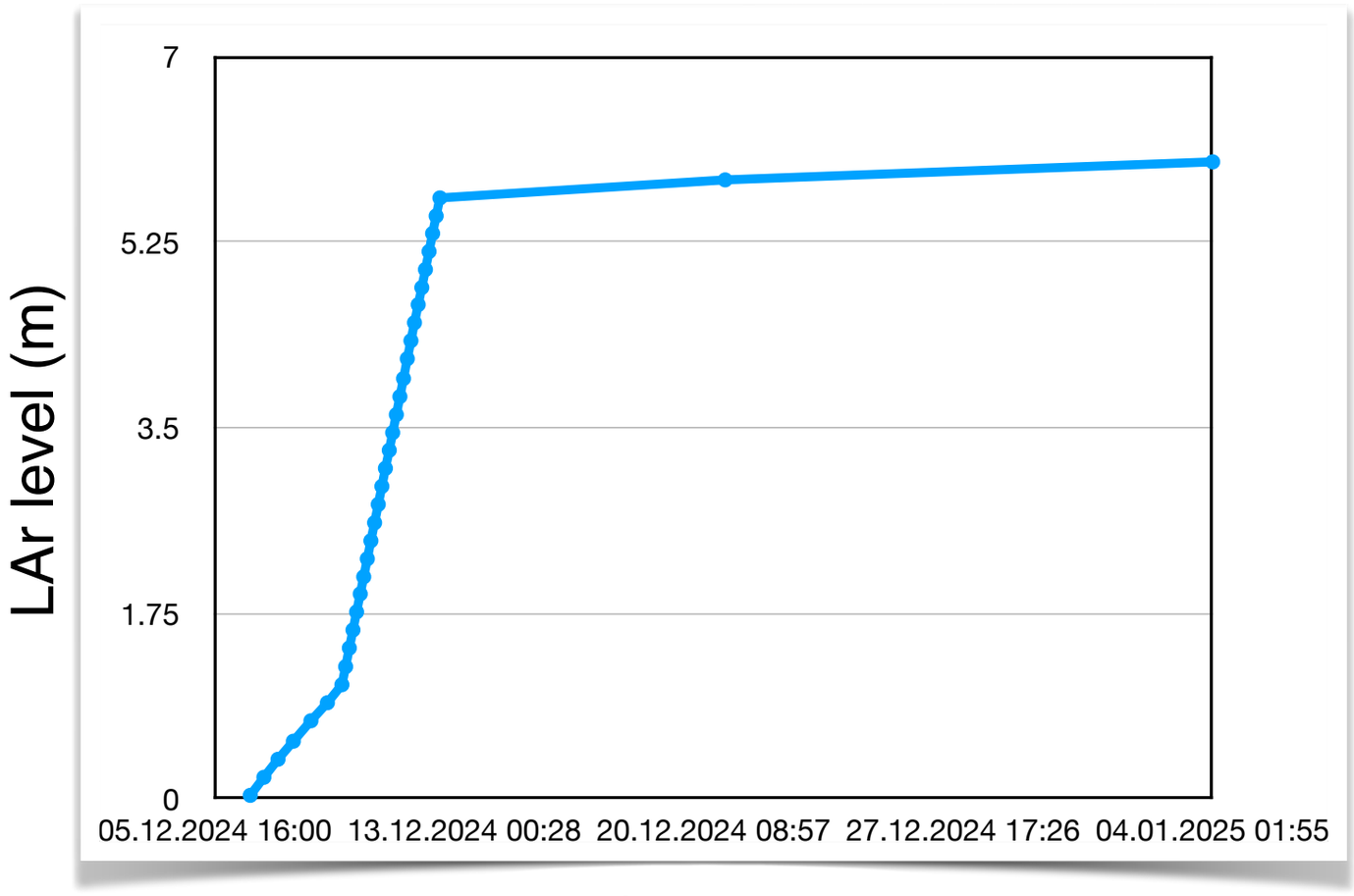
NP02 status

Filippo Resnati

8th January 2025

Transfer from NP04

- Filling of NP02 started on the 6th of December (at ~2 ton/h)
- LAr purification filters bypassed, but good purity as LAr from NP04 was pure
- From Monday 9th increased the transfer speed:
  Taking 6.95 ton/h from NP04, and filling NP02 with 6.65 ton/h
- LAr transfer stopped in the morning of the 12th of December
- Condensing into NP02 ~13.7 g/s from NP04 boil-off for almost 4 weeks
- As of today LAr level is approximately 6.05 m



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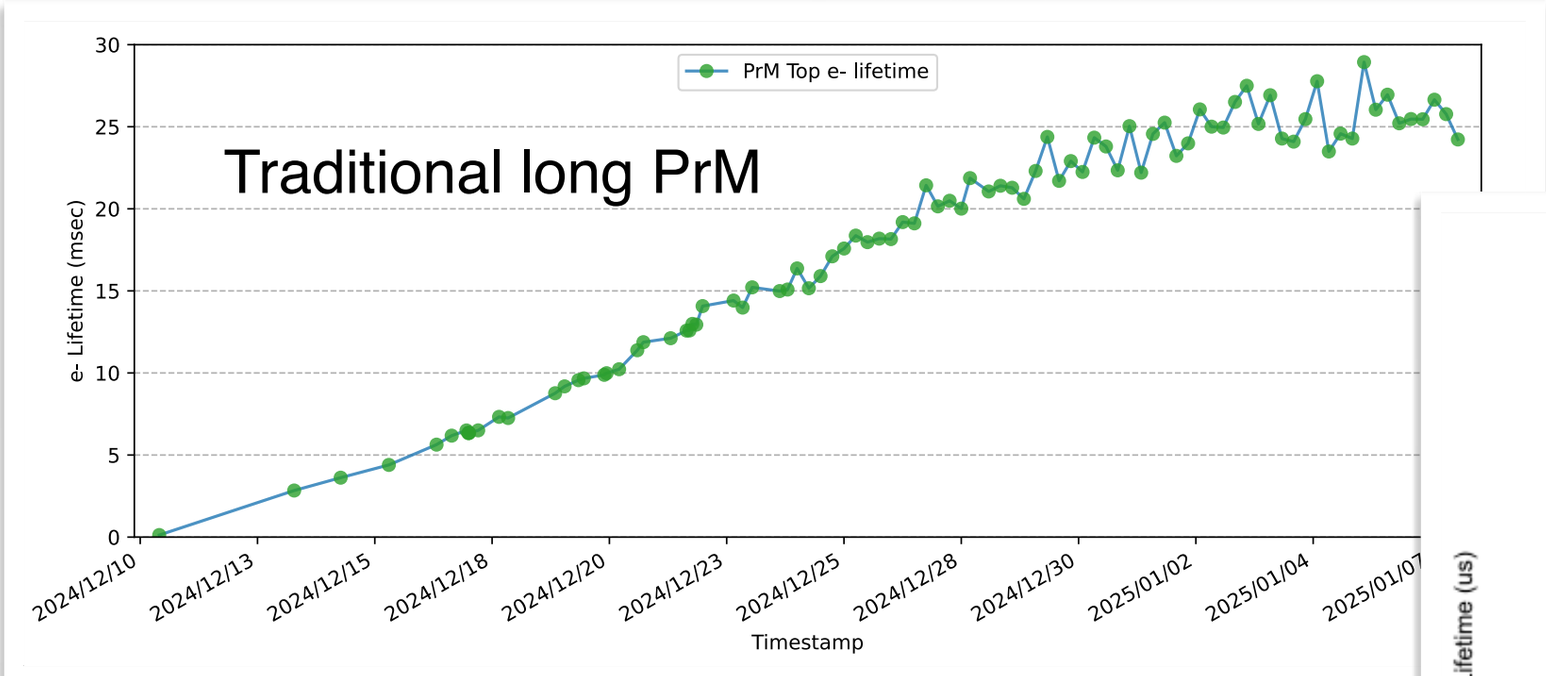
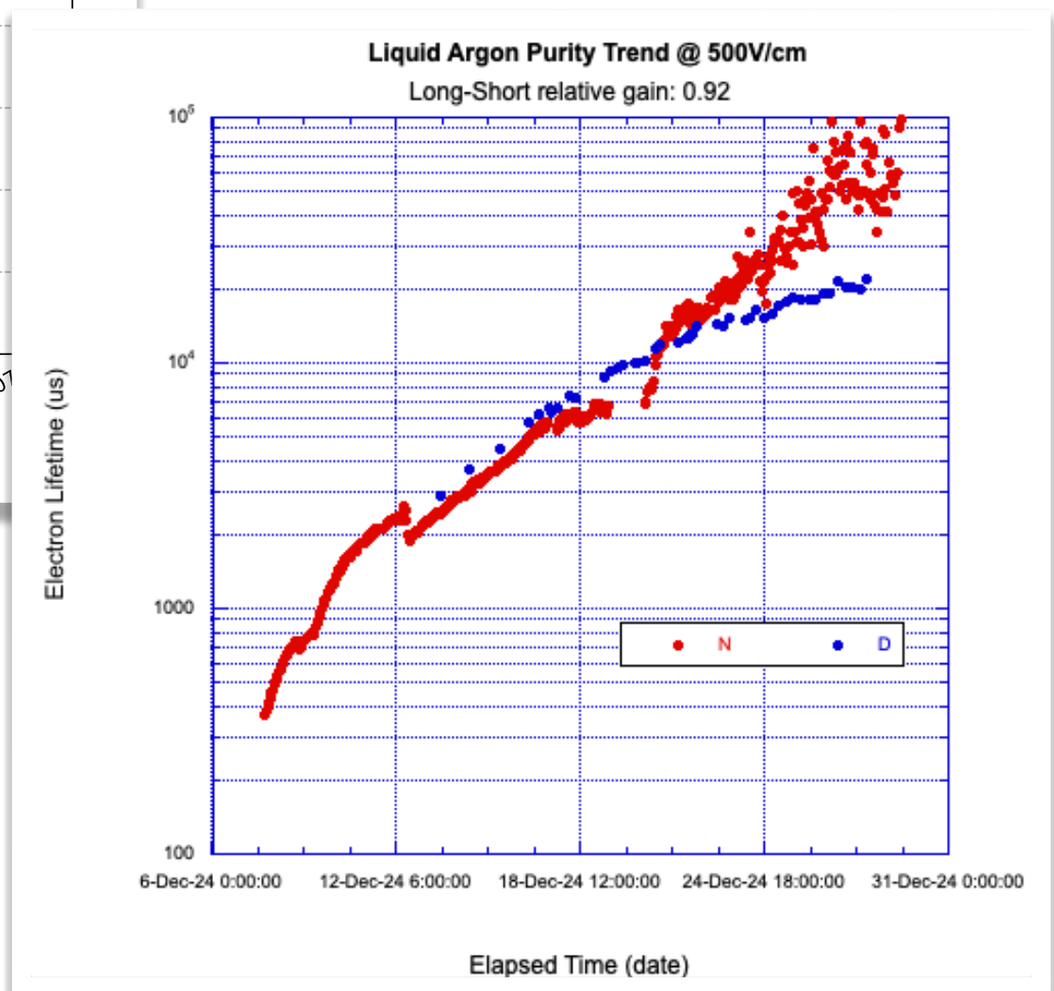
Purification and filter clogging

Very good purity



^{207}Bi-based PrM comparison



After the start of the LAr circulation,
mechanical filter* was clogging: 230 mbar in 7 h

After first cleaning clogging reduced
by a factor of ~45: 140 mbar in 8 days

Stable purification speed of 6.7 ton/h

*Mechanical filter was introduce to ease the cleaning procedure

Complete the filling

There are approximately 600 ton in NP02.
We need to purchase ~160 ton to complete the filling.
First truck arrives tomorrow and the second on Friday.
Start the top up on Friday without stopping the purification.
It's the first time this is tried, if it is not stable or too slow:
- switch off recirculation,
- vent boil-off from chimneys,
- fill in the standard way.

Filling will be completed in the week of the 20th of January

Before the start of the top-up:
- stop condensation from NP04,
- cleanup the mechanical filter (just completed).

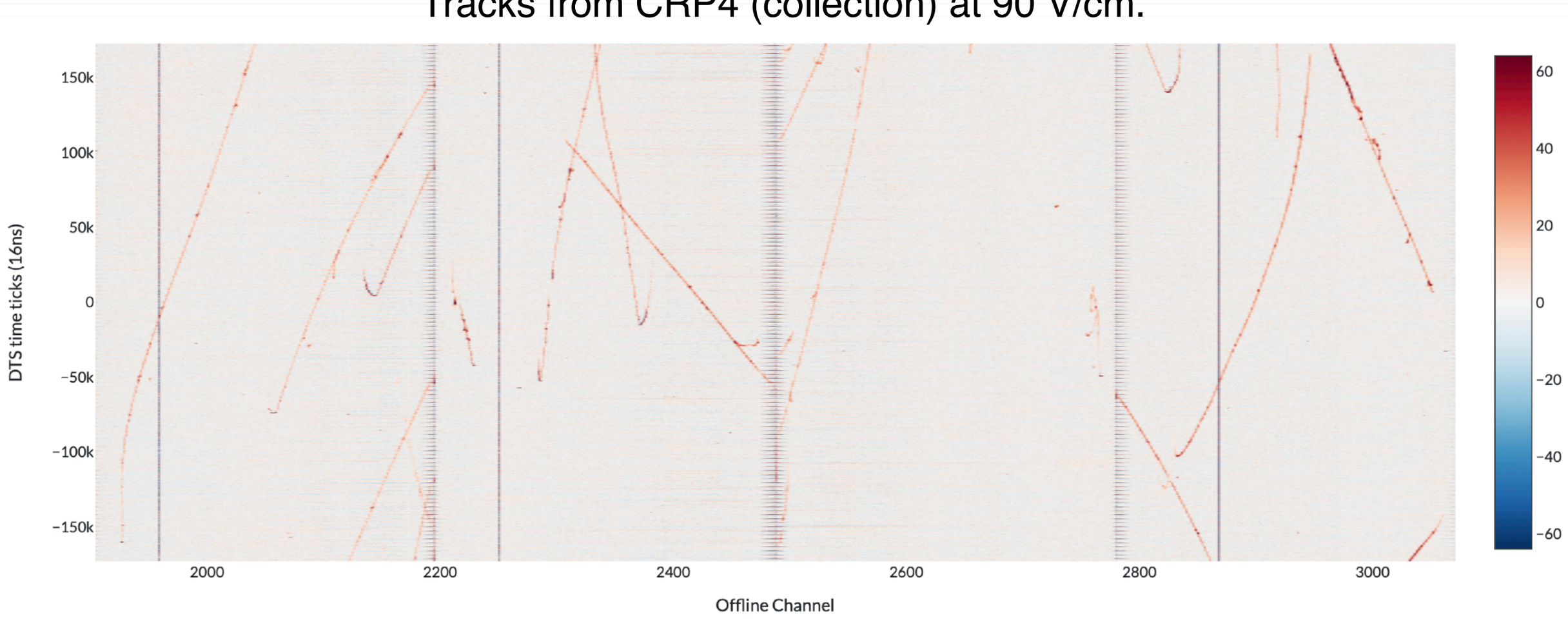
During top-up, as for the filling:
- Important to follow the purity evolution (expected to decrease)
- Access in the NP02 pit, clean room, cold box area, and roof will be limited

After filling is completed:
- purification filters may need to be regenerated (TBD)
- establish stable condensation and circulation

Cathode HV tests

In the last week before the end-of-the-year break, voltage was applied at the cathode, with the goal of checking HV system integrity (continuity, currents, leakage through BP, …), electronic noise induced by HV, and confirm purity with trucks (only CRP4 was biassed). Hunt of HV PS induced noise to be continued.

Tracks from CRP4 (collection) at 90 V/cm.



Planned power cut

We had one planned power cut today. There will be more on 15th and 16th of January.
NP02 is now backed up by UPS, at least till the end of the centrally organised electrical tests.
UPS may induce some electronic noise, to be understood.
Whether or not to keep NP02 on UPS will depend mainly on its impact on electronic noise

Complex	Electrical test	Date
all CERN sites	Auto-transfert	20th – 22nd January 2025 (W4)
	Normal Secours (N/S)	8th January 2025 (W2)
Meyrin site	AUG Adm. Zone Meyrin	4th January 2025 (W1)
	AUG PS & PSB	11th - 12th January 2025 (W2)
	AUG West area	14th December 2024 (W50)
Prévessin site	AUG Adm. Zone Prevessin	15th March 2025 (W11)
	AUG North area (BA80-BA81-BA82)	15th – 16th January 2025 (W3)
SPS	AUG SPS1	11th December 2024 (W50)
	AUG SPS2	3rd February 2025 (W6)
	AUG SPS3	17th December 2024 (W51)
	AUG SPS4 + AWAKE	16th December 2024 (W51)
	AUG SPS5	27th January 2025 (W5)
	AUG SPS6	13th January 2025 (W3)
	AUG SPS7	10th February 2025 (W7)
LHC	Transformers maintenance / AUG LHC1 (including HL) + ATLAS	6th / 7th January 2025 (W2)
	AUG LHC18 + SM18	13th February 2025 (W7)
	Transformers maintenance / AUG LHC2 + ALICE	3rd / 4th February 2025 (W6)
	Transformers maintenance / AUG LHC3 + LHC3Z	22nd /23rd January 2025 (W4)
	Transformers maintenance / AUG LHC4	13th / 14th January 2025 (W3)
	Transformers maintenance / AUG LHC5 (including HL) + CMS	11th / 12th December 2024 (W50)
	Transformers maintenance / AUG LHC6	29th / 30th January 2025 (W5)
	Transformers maintenance / AUG LHC7	5th / 6th February 2025 (W6)
	Transformers maintenance / AUG LHC8 + LHCb	27th / 28th January 2025 (W5)