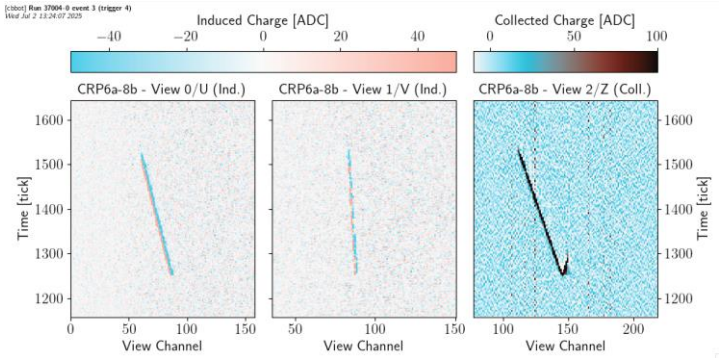
NP02 news and update

- NP02: Full activity of commissioning continuing
  - PDS with cathode modules activation and operation
  - Continuation of noise investigation and HV connection system end of last week
    - Study of the new part connection => variable noise levels depending on the mechanical tightness of the part; effects from temperature change day to day (polyethylene shrinkage into the feedthrough) makes the connection loose and then loss of good grounding.
    - Need to control every day up to now.
    - Installation of a new cable tray to route the HV cable from the power supply to the feedthroughs
  - Trigger and DAQ activity
  - Cathode HV Test done at 70 kV on Monday with CRP not biased and biased
  - Some cosmic data taking done Monday afternoon to check the CRP system
  - Beam plug commissioning: filling started yesterday afternoon and will continue until tomorrow
  - Tomorrow, if the filling is completed, foresee to test the cathode HV at around 150 kV and check noise situation; depending on the condition may repeat some cosmics data taking
- CRP8 coldbox test in parallel

CRP8 in coldbox

- Transfer to the coldbox on Thursday June 26th
- Purge during the weekend and filling started on June30th
- Fill first with 20cm to leave the CRP in gas phase and get noise level data
- Full filling completed on July 1st evening

  - CRP is biased since 1 week
  - Cathode is at 11 kV
  - First run to check with cosmic tracks the response of the CRP
  - More than 20 runs at various bias settings to study charge transparency on both CRUs



11	Starting a new monitoring run ; recondensation was started at 10am ; s	36997	Noise
12	Run with CRP8 biased at nominal voltage and cathode at -11kV	37004	Cosmics
13	CRP8 run at nominal voltage (2Hz DAQ)	37024	Cosmics
14	Shield at 1.45kV and induction1 at 450V (2Hz)	37029	Cosmics
15	Shield at 1.4 kV and induction1 at 400 V (2 Hz)	37031	Cosmics
16	Shield at 1.35 kV and induction1 at 350 V (0.2 Hz)	37032	Cosmics
17	Shield at 1.3 kV and induction1 at 300 V (2 Hz)	37034	Cosmics
18	shield at 1450 V, ind1 at 500 V collection at 1 kV (2 Hz)	37035	Cosmics
19	shield at 1400 V, ind1 at 500 V collection at 1 kV (2 Hz)	37036	Cosmics
20	shield at 1350 V, ind1 at 500 V collection at 1 kV (2 Hz)	37039	Cosmics
21	shield at 1300 V, ind1 at 500 V collection at 1 kV (2 Hz)	37040	Cosmics
22	shield at 1500 V, ind1 at 500 V collection at 950 V (0.1 Hz)	37041	Cosmics
23	shield at 1500 V, ind1 at 500 V collection at 900 V (0.1 Hz)	37042	Cosmics
24	shield at 1400 V, ind1 at 450 V collection at 1000 V (2 Hz)	37043	Cosmics
25	shield at 1500 V, ind1 at 500 V collection at 1000 V (2 Hz)	37046	Cosmics
26	shield at 1350 V, ind1 at 450 V collection at 1000 V (0.2 Hz)	37081	Cosmics
27	shield at 1475 V, ind1 at 475 V collection at 1000 V (2 Hz)	37087	Cosmics
28	shield at 1350 V, ind1 at 400 V collection at 1000 V (2 Hz)	37098	Cosmics
29	shield at 1350 V, ind1 at 350 V collection at 1000 V (2 Hz)	37110	Cosmics
30	shield at 1425 V, ind1 at 425 V collection at 1000 V (2 Hz)	37117	Cosmics
31	shield at 1375 V, ind1 at 375 V collection at 1000 V (2 Hz)	37122	Cosmics
32	shield at 1325 V, ind1 at 325 V collection at 1000 V (2 Hz)	37126	Cosmics
33	shield at 1500 V, ind1 at 500 V collection at 1000 V (2 Hz)	37128	Cosmics

- Cold test of the CRP8 is completed since this morning; HV are off
- In the meantime: very last minute request to keep cold the box in order for PDS to test a new board on the week of July 20th
- Implication to be understood

NP02 news and update

Noise investigation status:

- generally progressing and improving
- Still remaining effect observed like ripple effect from the power supply: some tests done this week; increasing the resistor on the cable but effect less than expected
- Search for other possible sources were not done by lack of time

When the noise is solved:

- Run cosmic test with HV at nominal voltage with the different detectors activated

- DAQ integration of the TDE system

To be scheduled outside the beam period: UPS bypass: test of noise with the different detectors (BDE, TDE, PDS)

Plan in coming days and weeks

- **Week of 15/07**:
  - Complete the beam instrumentation commissioning until Tuesday
  - Start of the activity on Ionisation laser installation

July 2nd 2025

End

Restart of NP02 detector activities

Procedures and risk assesment for all NP02 tasks in coming weeks	edms	status	Impact	dates
Electronic Noise investigation	https://edms.cern.ch/document/3287505/	Work on HV power supply and cable started	ok	Several weeks for HV tasks from Jun 10th
Beam Plug Commissioning	https://edms.cern.ch/document/3287379/	To be started	Not yet	Before July 7th
DAQ Installation and Operation	https://edms.cern.ch/document/3302190/	Work ongoing	ok	Regular intervention and operation
Commissioning and Operation of PDS	https://edms.cern.ch/document/3287089/	Work started on 2/06/25	ok	Before July 7th
Commissioning of ^{207}Bi PrM	https://edms.cern.ch/document/3287357/	Will come later	Not yet	
Installation of Beam Window	https://edms.cern.ch/document/3287705/	Work started on NP04 side	Ok	Before July 7th
Commissioning of PMTs	https://edms.cern.ch/document/3287383/	Ready to start;	ok	1 week from June 16th
Cold Box Tests	https://edms.cern.ch/document/3305050/	Ready to start	ok	Cold box lid opening: 4/06 Faraday cage test: from 13/06 Coldbox test: 19/06 ?

NP02 Reminder:

- Any activity should have a IMPACT declaration approved
- Going in EHN1 for any activity requires to follow the rules:
  - dosimeter
  - Wear Helmet, hard shoes, gloves depending on activities
  - no food nor drink
  - Portable ODH required to access the pits
  - Read in detail the procedures
  - Be sure to have done the required training associated to the corresponding task for each procedure and use the appropriate PPE

Beam period:

- Request to delay the beam periods for NP02 was done to SPS coordination
  wait for news to see what can be eventually done

- The Beam and beam instrumentation commissioning week is from July 9th to July 16th

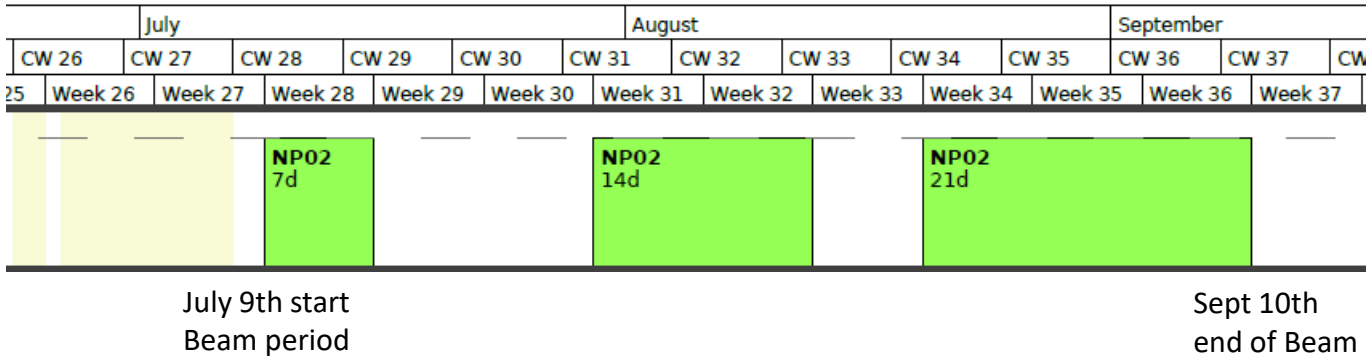
- From NP02 side: important that week is to get the Trigger interfaced with the beam instrumentation

- Complete TPC will not be fully working before September; needs a minimum of 10 weeks to complete the commissioning, integration , tests with cosmics, for all systems

NP02 beam originally assigned periods

Beam run periods:

- 1 week (w28) beam (9-15/07)
- 2 weeks (w29,w30) off (16/07 - 29/07)
- 2 weeks beam (w31,w32) (30/07- 12/08)
- 1 week off (w33) (13/08-19/08)
- 3 weeks beam (w34,w35,w36) (20/08-9/09)



The first beam week was allocated for beam and beam instrumentation commissioning

April 23rd 2025