

## Preliminary Considerations and Perspectives for ProtoDUNE VD in 2025

- NPO2 Run coordination meeting - - January 16th
- ProtoDUNE/Module 1 - VD PDS Meeting - January 17th

# ProtoDUNE VD in 2025

## Preliminary perspectives for NP02 Operation at Neutrino Platform

- *January(2-3 weeks)*: completion of LAr filling, complete installations and preliminary tests.
- *February (2 to 4 weeks)*: **Detector(s) Activation/Commissioning/Tuning** [HV, TPC/CRP, PDS/C&M&PMT, DAQ - in Series and in Parallel at some point] - take all time needed.
- *March-August*: (minimum) SIX months NP02 continued Operation currently envisaged
- Request to SPSC for Beam Time (LE-charged ptcl. H<sub>2</sub>/NP02 Tertiary beam) is submitted:
  - 4-6 Weeks Beam Time Slot (tba agreed by SPSC)- starting in May and presumably across June/July: proposed 3 blocks of 2 Weeks each w/ Beam, and two weeks w/out beam in between.
- NP02 Operation (6 Months: March-Aug) should be organized in “SubRuns” - including (and culminating with) the H<sub>2</sub>/NP02 Beam (sub)Runs
- **The list of the SubRuns&Tasks and the Agenda is under construction** - starting now by calling for Inputs from all relevant parties - DUNE Consortia (HV, TPC/CRP/TDE-BDE, **PDS**, DAQ, CALCI) and Physics Coordinators and also Grp.s involved with specific instrumentation in NP02 (e.g PMT array, PurMon, Calibration Sources, Purification Methods, ...)

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## Basic Assumptions for subRuns list candidates

- SubRuns main Tasks/Topics:
  - **Detector Performance Characterization/Demonstration:**
    - Periodic (e.g once a month) TestPulse/LED Flash Calibration Run (PD): stability of Response over time.
    - Periodic Detector Development Run [e.g. PD-DAQ, PD-Trigger, PD r/o Electronics (warm&cold)]
  - **Detector (Absolute) Calibration** with “calibrated” Signal Sources & Trigger:
    - LASER Periscope Run (for TPC)
    - PNS (Pulsed Neutron Source) Run for PD and TPC
  - **“Physics”**
    - Cosmic Runs w/ External CRT Trigger
    - Beam Runs w/ LE-charged ptcl. H<sub>2</sub>/NPO<sub>2</sub> Tertiary beam Trigger
    - Dedicated Physics Runs (tbd)

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## Basic Assumptions for subRuns list candidates

- Special Tasks/Operations - of interest for PD:
  - **Xenon Doping:**
    - Dedicated Run time for Xe-doping in steps (from 1 ppm to 10 ppm)
    - PMT-XARAPUCA special Run
  - **N2 Filtration Test:**
    - Dedicated Run for (new) N2 Filter demonstration - (if N2 contamination is requested, this will be necessarily at the end of NPO2 Run)
  - ....