

ND-LAr Consortium bi-weekly

Dwyer/Weber
Dec 5th, 2024

No 2x2 NuMI beam in FY25

Just in: message from FNAL directorate

“As you know, we have been working to understand the complex’s readiness to support Main Injector beam in FY25. Given the current challenge with the Kautz Road substation transformers, and the MI heat exchangers, **we regret to say that we are unable to provide beam for the Main Injector programs in FY25. ...**”

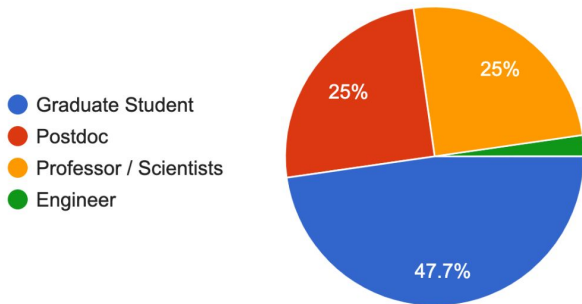
- Situation was known to be difficult
- Communication at the DUNE call Nov 15th
- Held general consortium meeting Nov 21st and collected input through survey

- Further input and planning today

Survey results

Career-stage

44 responses

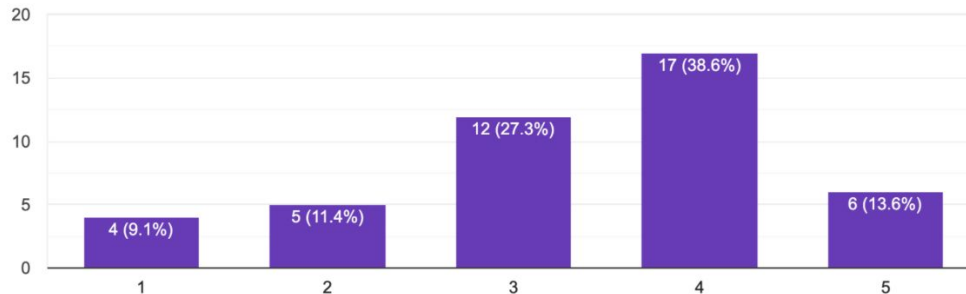


Presenting graphs here

Many very thoughtful and detailed comments in the open questions, thank you !

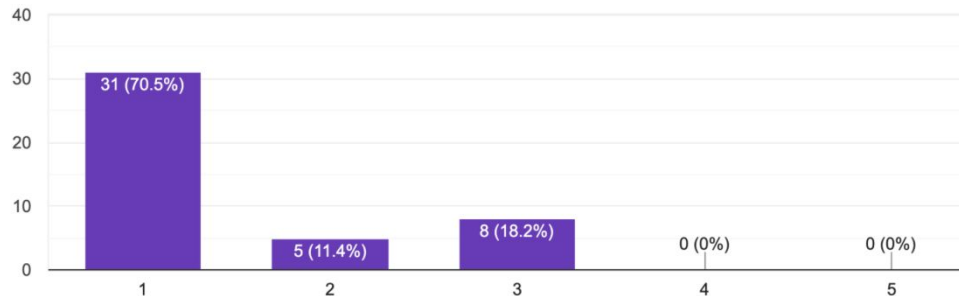
Do you have sufficient information on the technical issues related to running NuMI that led to the decision not to prioritize 2x2 running by the DUNE management?

44 responses



Were your views considered and represented in the decision-making process?

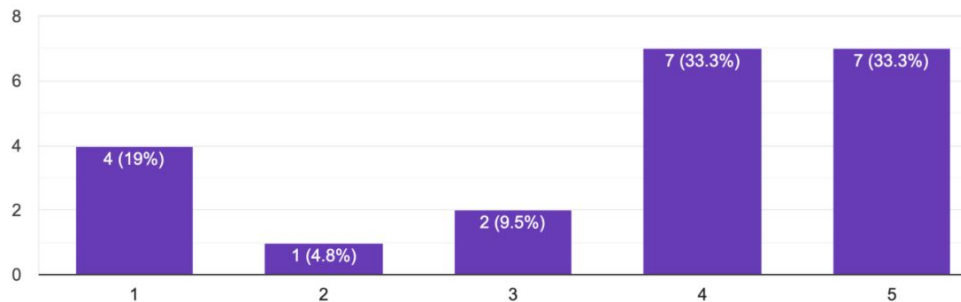
44 responses



Survey 2/2

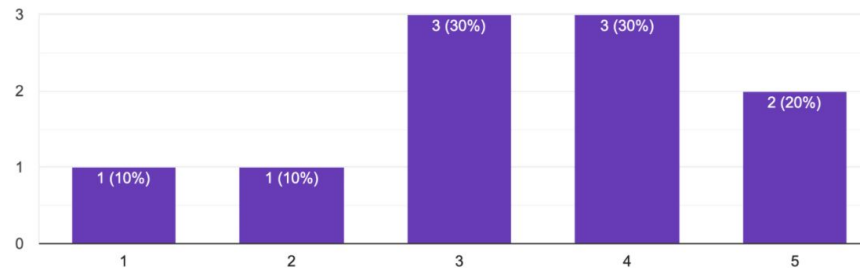
For Graduate Students: Does this decision impact your thesis topic and/or graduation timeline?

21 responses



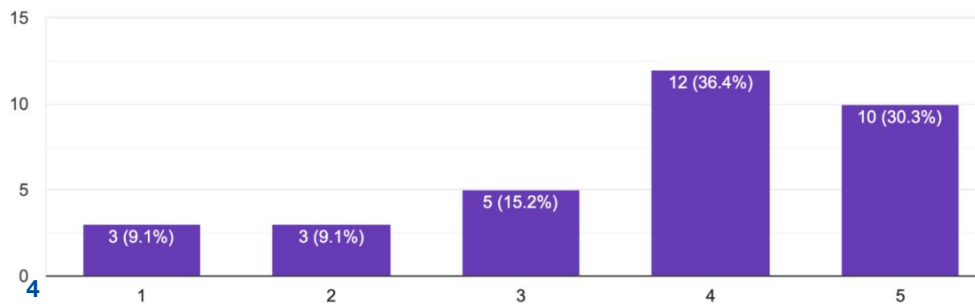
For Senior Members (PIs): Does this decision impact your (and your group's) plan to be involved in physics activities related to ND-LAr or its prototypes (including the 2x2) within DUNE?

10 responses



For Early Career Scientists (Students, Postdocs, others): Does this decision impact your career progression?

33 responses



2x2 Analysis Perspectives

See [slides](#) by Zoya/Pedro from Nov 21st

Zoya/Pedro are working with subgroup leads to set a timeline and priorities for coming months

Will have a special session to brainstorm potential physics topics with existing data during the next ND Prototypes Analysis meeting (Dec. 12 @ 11.30am CT). Ideas are welcome!

Remember to register for the workshop at CERN (Jan 24-25): <https://indico.fnal.gov/event/67027/>

Physics-quality data collected by 2x2 in July 2024:

POT	# of spills	# of LAr interactions
~1.3e19 POT	~325k	~45k

Additional data sets were also collected in alternative configurations, and we have the cosmic data (now also from FSD!)

DUNE ND Prototypes and Sim/Reco Joint Workshop

Jan 24 – 25, 2025
Europe/Zurich timezone

Enter your search term

Overview

Timetable

Registration

Accommodation

Venue

Site access and other practical information

Visa letters

How to get to CERN

CERN Wi-fi Network

CERN Map

Remote connection

The ND sim/reco and ND Prototypes Analysis working groups will have a joint workshop at CERN on January 24-25, 2025, shortly before the [DUNE collaboration meeting](#).

During the workshop, we will address the latest in 2x2 analysis as well as the most recent developments in ND sim/reco tools. In addition to advancing our work in these areas, the primary goal is to prepare for upcoming reviews in the first quarter of 2025.

We expect the workshop to begin at 9.00am and to end around 5.30pm local time on both days. Experts and newcomers from both groups are welcome to attend. We anticipate dedicating a substantial portion of the time to discussions and working sessions. As is usually the case, we plan to have activities that will help bring newcomers up to speed, such as tutorials.

We hope most people can attend in person, but we plan to offer a remote connection. Only those participating in person for at least one of the two days need to register. Please note that the registration will take you to a page hosted in the CERN Indico.

 Starts Jan 24, 2025, 9:00 AM
Ends Jan 25, 2025, 5:00 PM
Europe/Zurich

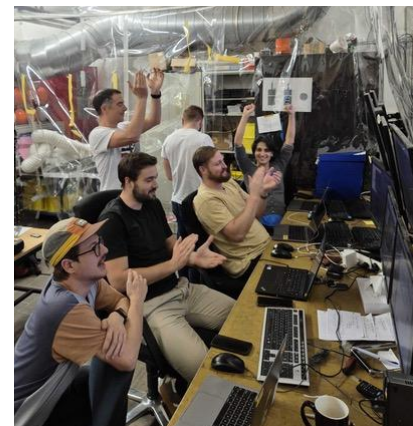
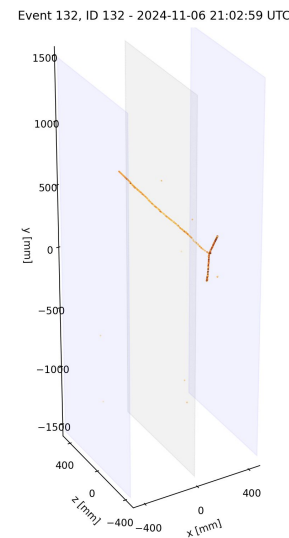
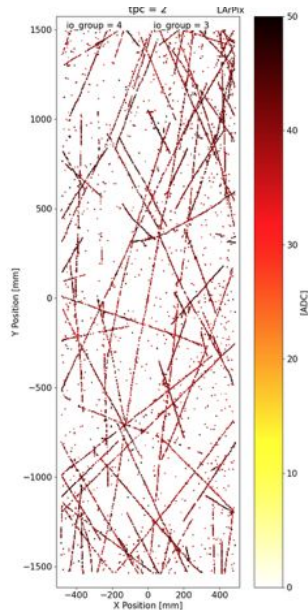
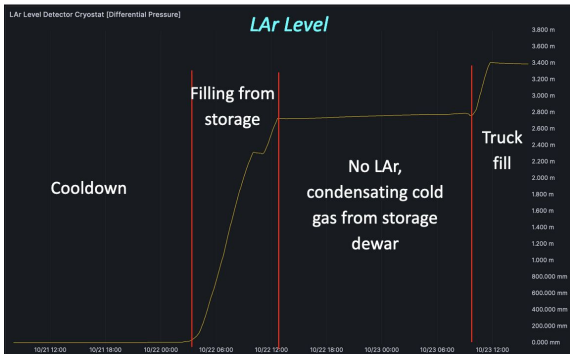
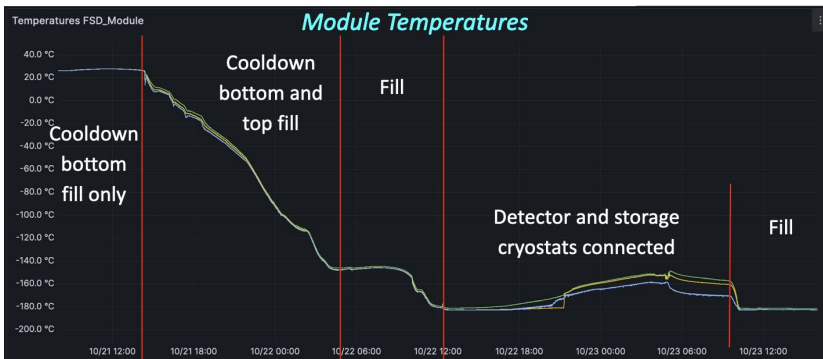
 J. Pedro Ochoa
Linda Cremonesi
Matteo Tenti
Zoya Vallari

 There are no materials yet.



FSD!

- Cooldown and filling between October 21st and 23rd
- HV ramp without issues to nominal (in a test to ~twice nominal)
- 3 weeks stable data taking
- Run ended Nov 13th



Summary of Status

- There is not going to be NuMI beam in FY25
- We did operate the 2x2, hurray!
- We did operate a full-size module of ND-LAr, hurray!
- We will hold Final Design Review(s)
- We do need continued efforts on 2x2/FSD (and ND-LAr in general)
- There are plans for measurements

Timeline plan

Plan in 3 phases

- Now through collab meeting / workshop (late Jan 2025)
 - Complete initial assessment of 2x2 data, establish v1 calibration and reco algs
 - Complete initial low-level 2x2 and FSD studies: data features, dQdx, pileup, field uniformity
 - Kickoff 2x2 run planning: including potential goals for possible non-beam run
 - Kickoff FSD run #2 planning: prelim list of goals
 - Kickoff TDR process
 - Refine MATF plan and schedule
- Collab meeting through FDRs complete (~Jan 2025 - ~July 2025)
 - Complete 2x2 refurbishments (main point is epoxy seal of top flange)
 - Finalize 2x2 run plan for non-beam and neutrino beam
 - Finalize FSD run #2 plan
 - Complete ND-LAr TDR
 - Extend 2x2 pileup analysis to full ND-LAr simulation
 - Prelim measurement(s) from 2x2 run #1 data
 - Finalize MATF plan, submit cryo system procurements
- FDRs through potential FY26 NuMI and 5-module-row ramp-up (~July 2025 ~Dec 2025)
 - Respond to outcomes from ND-LAr Final Design Reviews
 - Execute FSD run #2, assess results
 - Execute 2x2 non-beam run if planned, assess results, prepare for 2x2 beam run FY26
 - Finalize measurement(s) from 2x2 run #1 data
 - Initiate component production for Module Row Prototype (MRP)
 - Prepare MATF warm lab for MRP assembly, install and commission cold lab cryo system