NEUTRINO '26 – XXXII International Conference on Neutrino Physics and Astrophysics

LAr purification for LBNF-DUNE: Brazil in-kind contribution for innovative media and equipment production

by P. G. Pagliuso (**IFGW/Unicamp**)
on behalf of the members of the FAPESP Project # 2024/07128-7
and FINEP Project 01.24.0511.00 (Ref. 2345/24).

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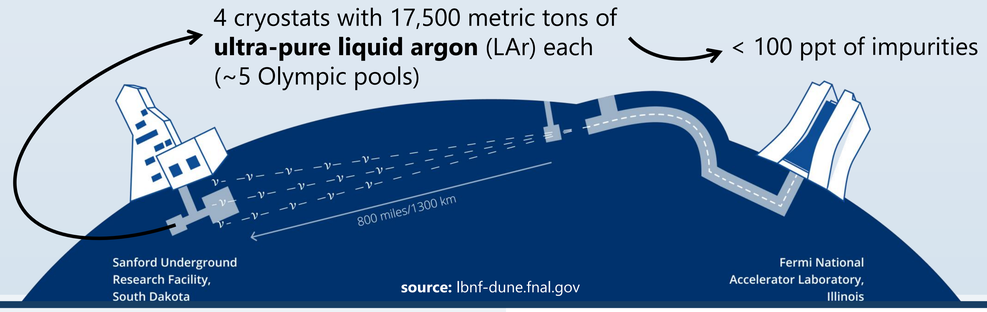
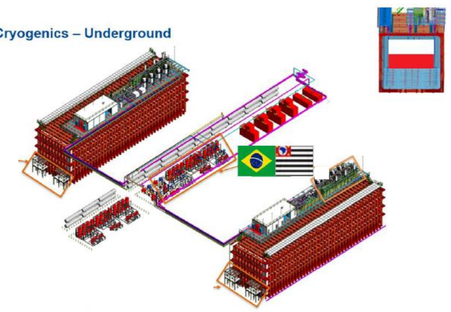
TA 2 – Fluid dynamics Studies - D. Noriler **– FEQ/UNICAMP, Brazil**
TA 3 – PuLArC Operation and Maintenance - M. B. Fontes – **CBPF, Brazil**
TA 4 – LNBF/DUNE – Large Equipment R&D and Engineering – Leader - Thiago P. M. Alegre **- IFGW/Unicamp**, **Brazil**
TA 5 – X-ARAPUCA Photon Detection system optimization – Leader - Ettore Segreto – **IFGW/Unicamp**, **Brazil.**
DUNE – Unicamp Future Data Center: Leader: Ana Amélia Machado **- IFGW/Unicamp**, **Brazil.**
Fermilab –USA Support Team - R. Doubnik, Z. West, D. Montanari

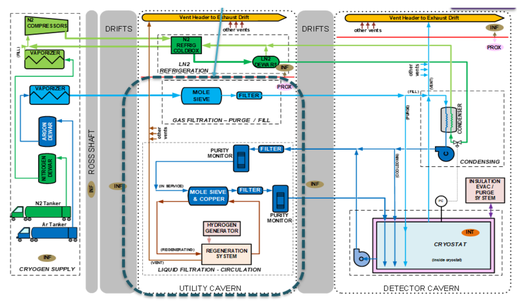
Brazilian in-Kind contribution (**ICRADA – CRADA No. FRA-2016-0017 Annex B and C**) for LBNF-DUNE cryogenics includes R&D, testing, engineering, design, manufacturing, commissioning, shipping and delivery of the Gaseous Argon (GAr) purification, LAr purification and Regeneration Systems for VD and HD Detectors of LBNF-DUNE. This effort brings several Universities and Research Centers (CNPEM, USP-SP, USP-São Carlos, UFSCar, CBPF-Rio, UFSJ, UFABC, ITA, CTI, UNIFESP, UTFPR, UNIFAL, UFRJ, UFF) lead by "Gleb Wataghin" Institute of Physics (IFGW) at University of Campinas (Unicamp) and Brazilian Companies integrated by Akaer and Equatorial Sistemas Ltda.

Deep Underground Neutrino Experiment

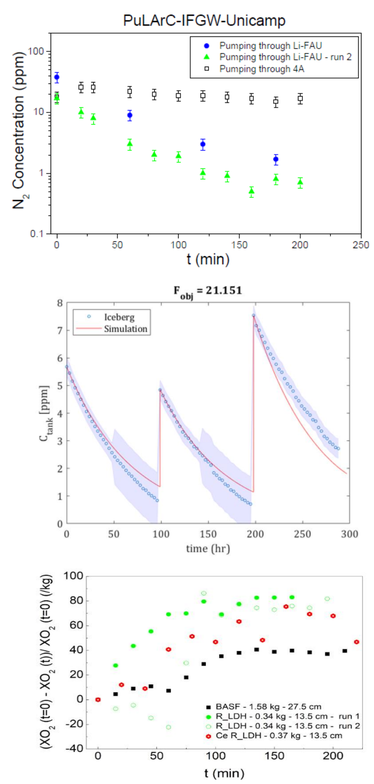
The **L**ong-**B**aseline **N**eutrino **F**acility (LBNF), located at the Sanford Underground Research Facility in Lead, South Dakota, hosts the **D**eep **U**nderground **N**eutrino **E**xperiment (DUNE).



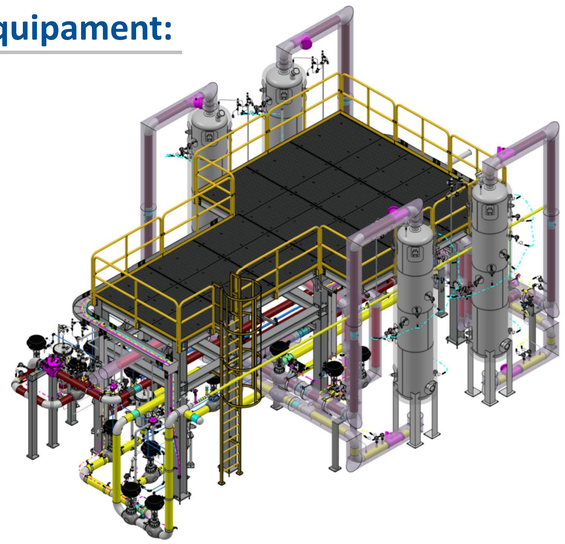




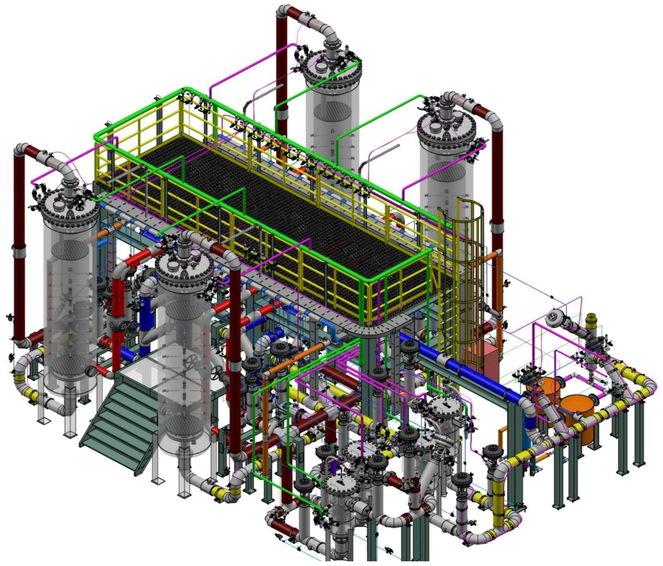
Innovative Media: Li-FAU and R-LDH



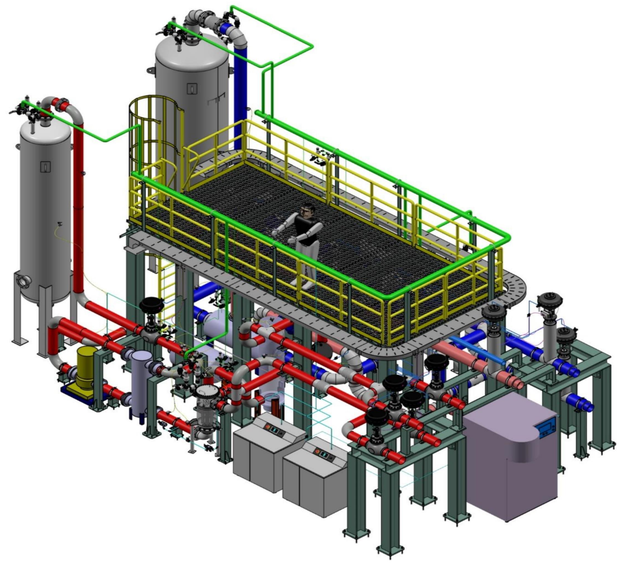
Equipament:



GAr – Gaseous Subsystem for VD/HD
Delivery Date – 04/2027



LAr – Liquid Subsystem for VD/HD
Delivery Date – 09/2027/06/2028



Regen – Regeneration Subsystem for VD/HD
Delivery Date – 10/2027/06/2028

Acknowledgments

UNICAMP FAPESP Finep INNOVATION & RESEARCH Fermilab

References

[1] Dilson Cardoso et al 2024 JINST 19 C08001.
[2] A.M. Caffer et al., JINST 20 (2025) C03043.
[3] Pedro Bianchi Neto et al. JINST 20 (2025) C06045