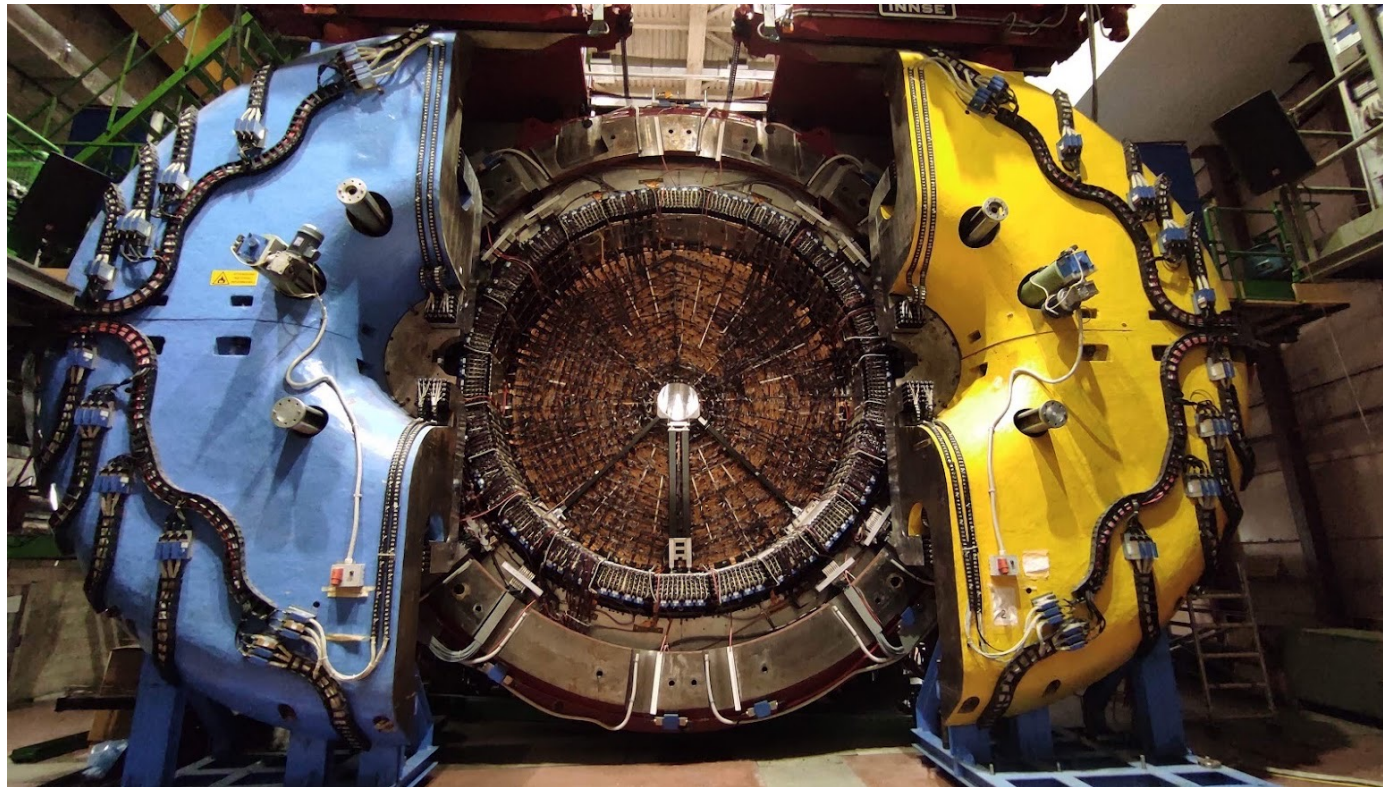

KLOE to SAND Progress Report

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and INFN-Roma, Italy



on behalf of the SAND-ECAL and SAND-Magnet WGs



SAND General Meeting – 8 October 2024

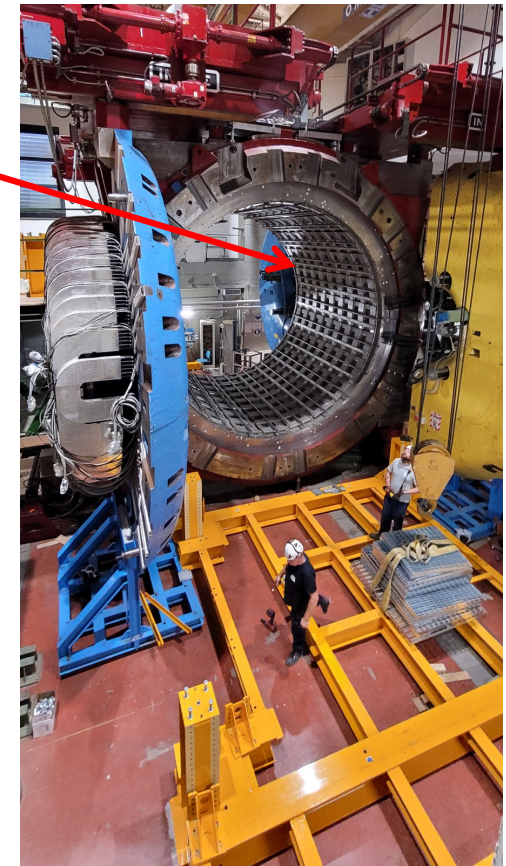
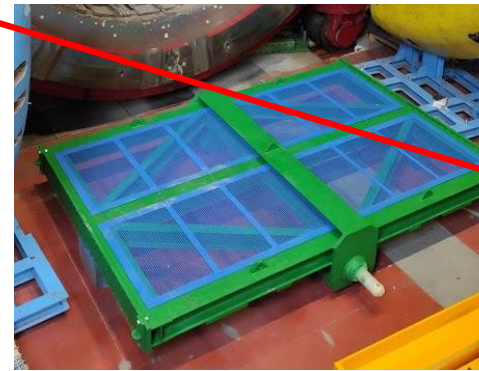
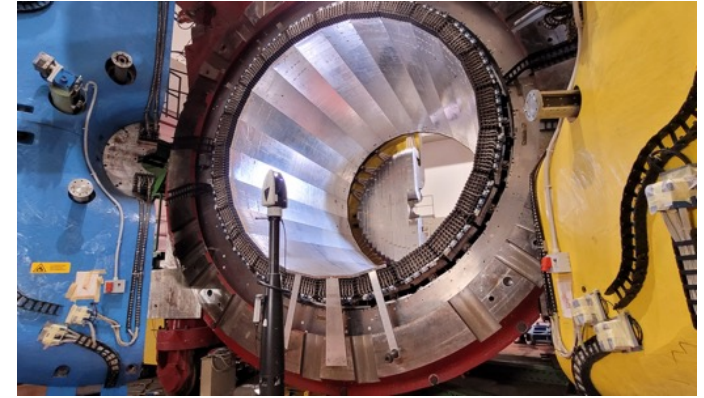
KLOE-to-SAND activities at LNF

Plan of operations:

- ✓ Removal of all cables and the FEE+HV racks
- ✓ Extraction of the Drift Chamber

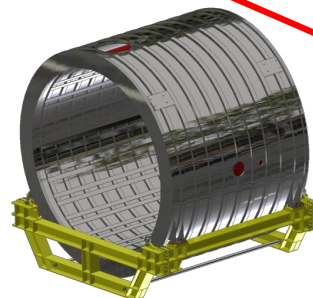
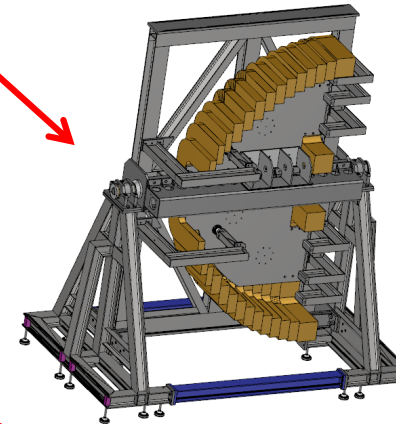
Calorimeter

- ✓ Laser tracker survey before ECAL dismounting
- ✓ Extraction of Barrel (24 modules)
 - insertion/extraction machine refurbished
 - movable platform built
- Dismounting of EndCaps
 - original insertion/extraction/rotation machine has been refurbished and modified
- Operational test of ECAL modules
- Studies for the ECAL working point & FEE



Magnet and Yoke

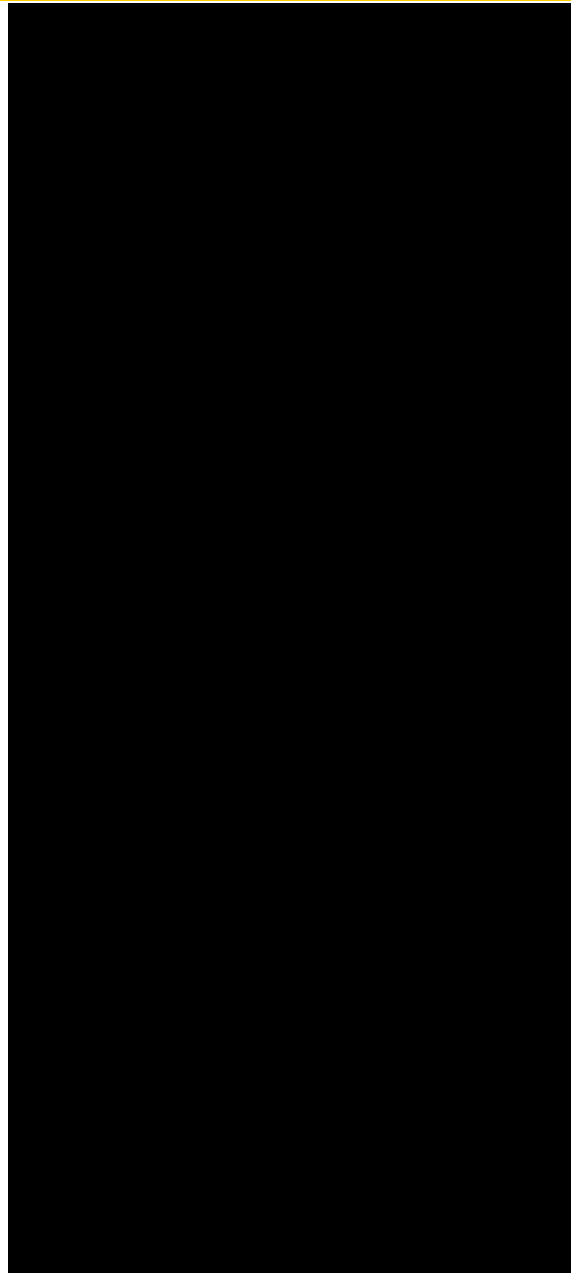
- Installation of new Power Supply
 - new Power supply unit and revamping of passive components (OCEM)
 - Control system and full support for magnet test/dismount/remount by ANSALDO ASG
- Cooling of coil
- Operational test of magnet
 - in preparation
- Extraction of coil
- Dismounting of Iron Yoke



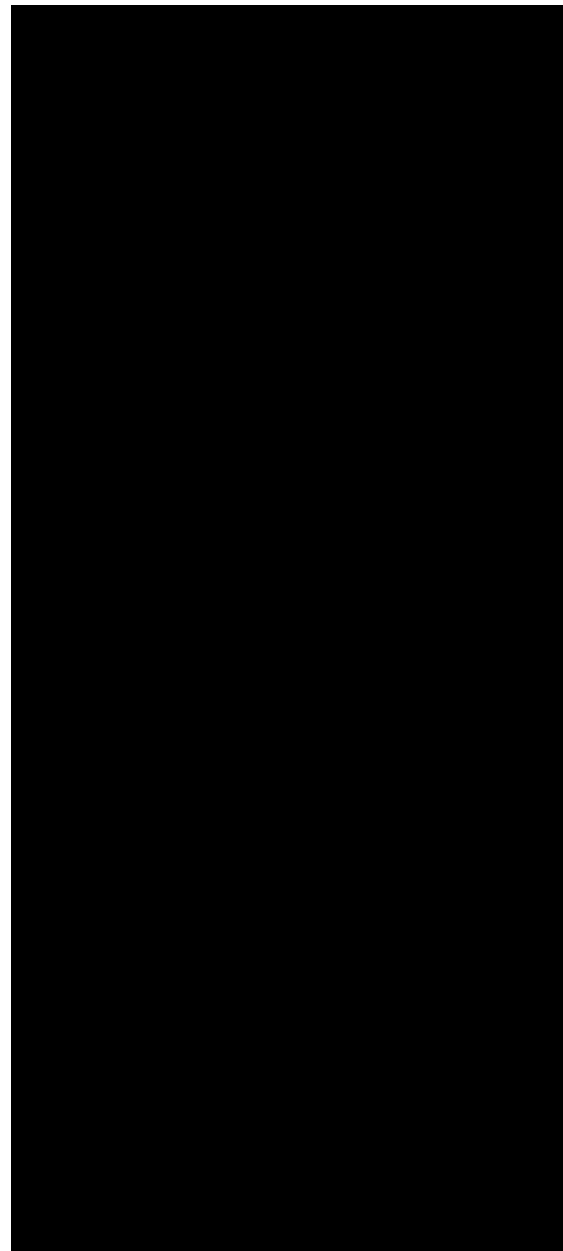
Packaging & Shipping at Fermilab

Flooding of the KLOE assembly hall

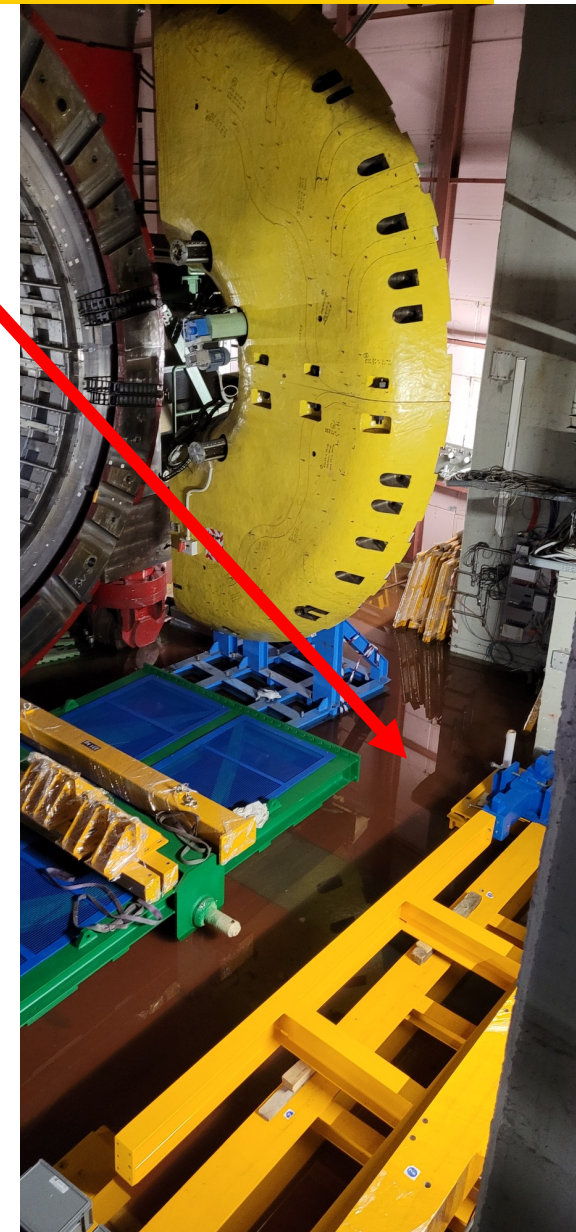
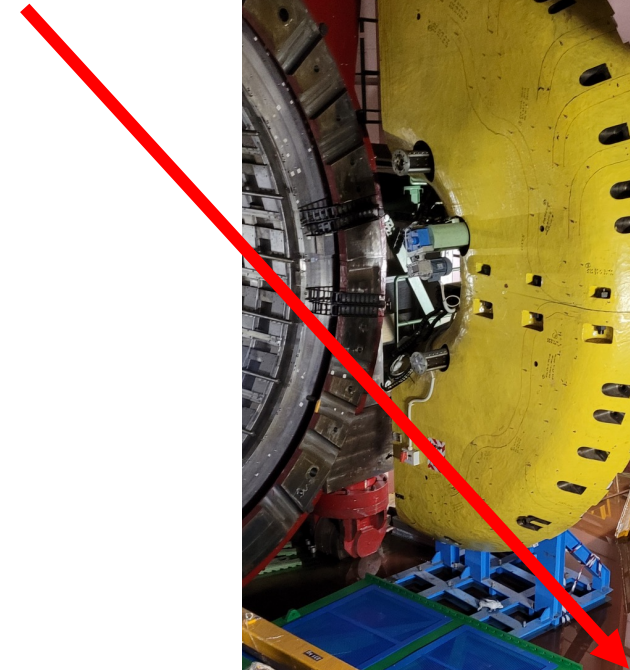
Due to bad weather and heavy rainfall occurred during Sept. 8th and 9th, the KLOE building was flooded.



Flooding of the KLOE assembly hall



flooded floor



Flooding of the KLOE assembly hall



Flooding of the KLOE assembly hall

In total 16 boxes soaked, 60 PMT+base each, corresponding to 8 complete barrel modules: in total ~ 1000 PMTs + bases



In addition ~ 150 spare bases stored in the “alte energie” building ground floor.

Flooding of the KLOE assembly hall



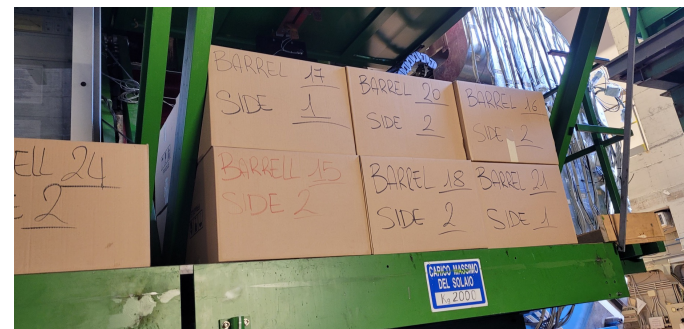
affected also parts of the movable platform
stored in the KLOE assembly hall
=> cleaned



Flooding of the KLOE assembly hall

on Tuesday Sept. 13th a new floor flooding.

PMTs safe!



Flooding of the KLOE assembly hall

- KLOE assembly hall (and DAFNE hall) is temporarily not accessible for security reasons
- Pumping out of water from the hall completed
- The hall should be accessible again starting from the next days/week, weather conditions permitting.
- Temporary countermeasures will be taken to contain/limit new possible events (e.g. sandbags protections etc.) while the LNF experts are studying the problem and investigating possible long term solutions.



Cleaning, drying and test of wet PMTs and bases

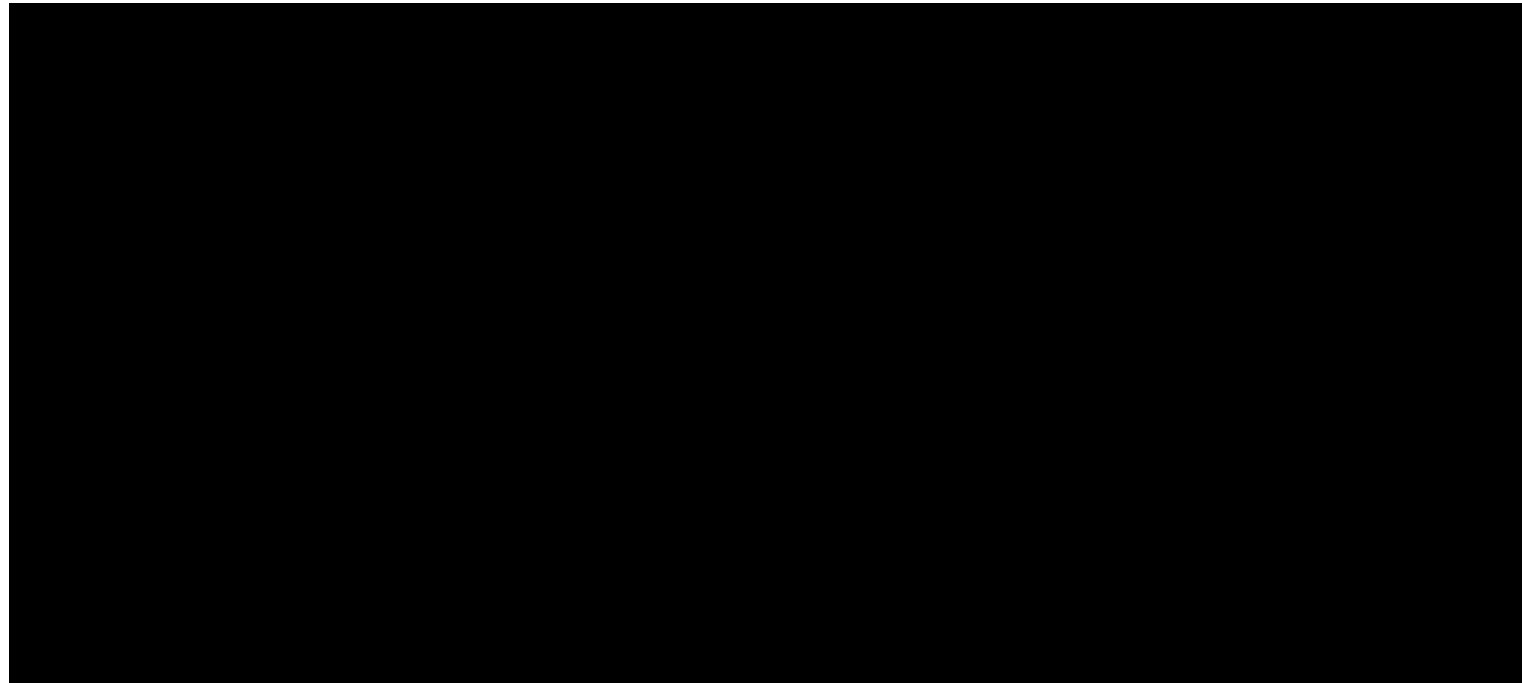
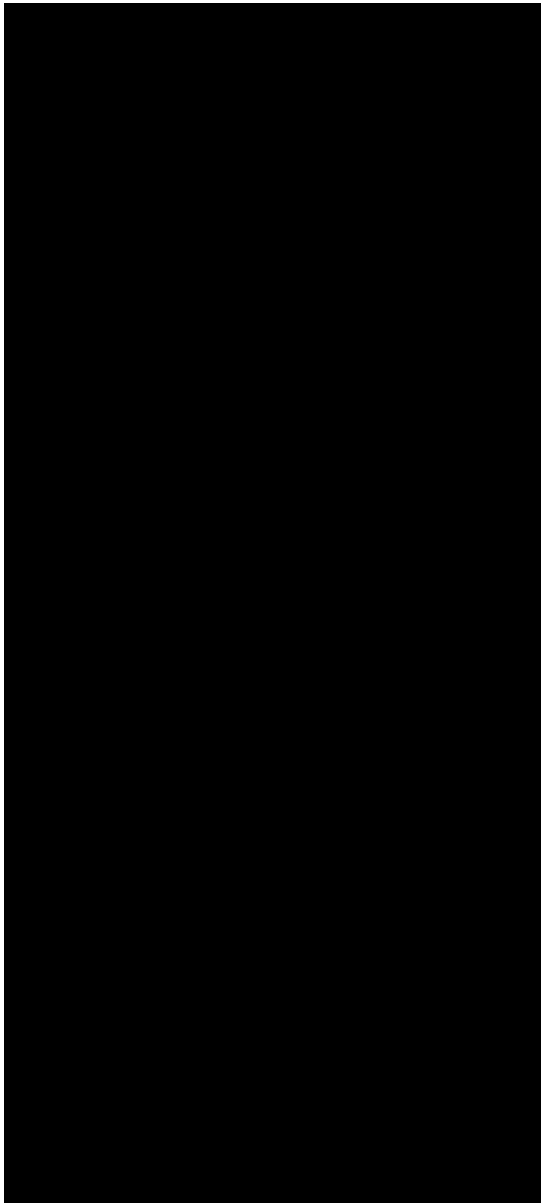
PMTs and bases were promptly removed from soaked paper bags, dried with paper cloath and stored in new bags



Cleaning, drying and test of wet PMTs and bases



Cleaning, drying and test of wet PMTs and bases



Cleaning, drying and test of wet PMTs and bases

We are studying more in-depth cleaning solutions

Test of ultrasonic washing with purified water of PMT+base
=> the labels are not affected by the procedure!



Alternative or complementary solution is washing with isopropyl alcohol

Cleaning, drying and test of wet PMTs and bases



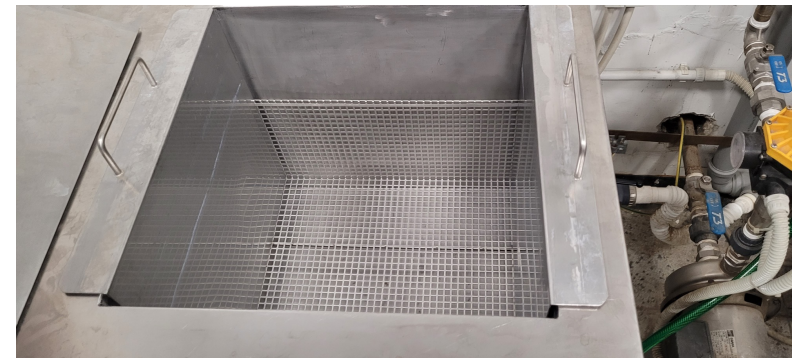
Large ultrasonic washing machine available at LNF to wash and clean PMTs and bases

Large climatic room available at LNF to dry PMTs and bases



Cleaning, drying and test of wet PMTs and bases

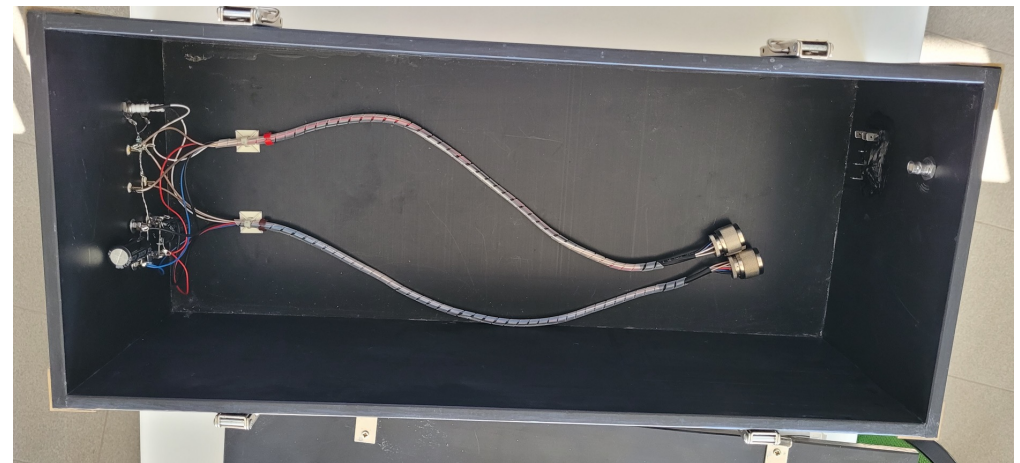
Two PVC frames holding PMTs and bases have been built, in total 30+30 PMTs+bases, and fitting the clearance of the large ultrasonic washing machine.



Cleaning, drying and test of wet PMTs and bases

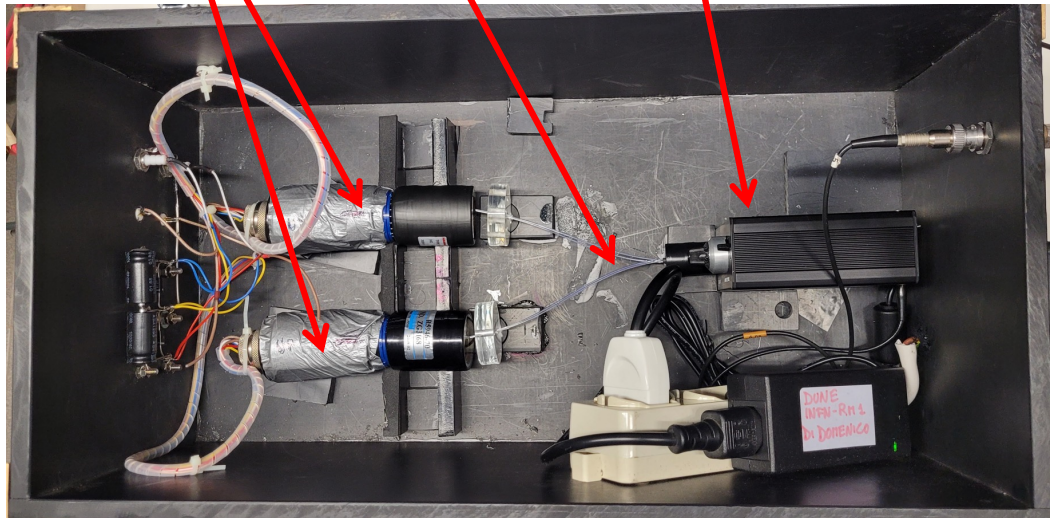
The effectiveness of the cleaning procedure will be tested on single PMTs and bases before applying the procedure to all wet PMTs and bases.

To test PMTs and bases we need a new black box (the other is temporarily at CAEN). A new black box is being instrumented with LED driver, scintillating fibers splitter, connectors etc. and completed with PMTs holders.

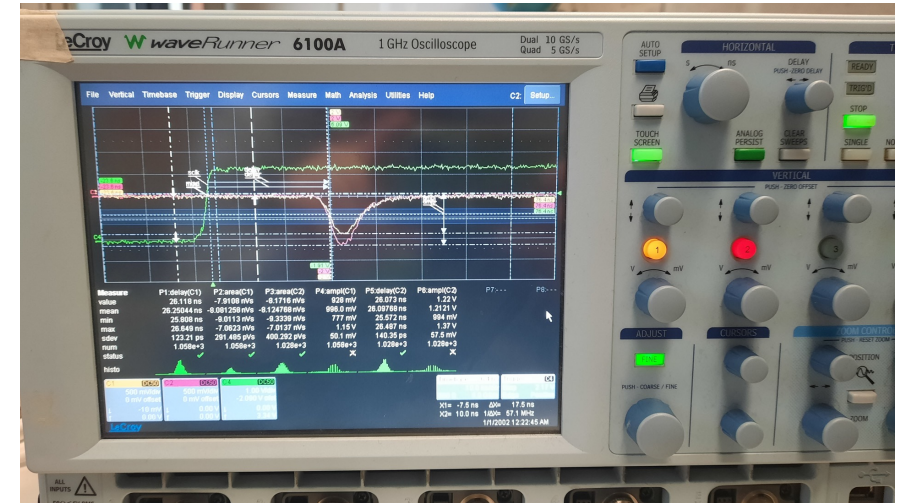


PMT system test at LNF

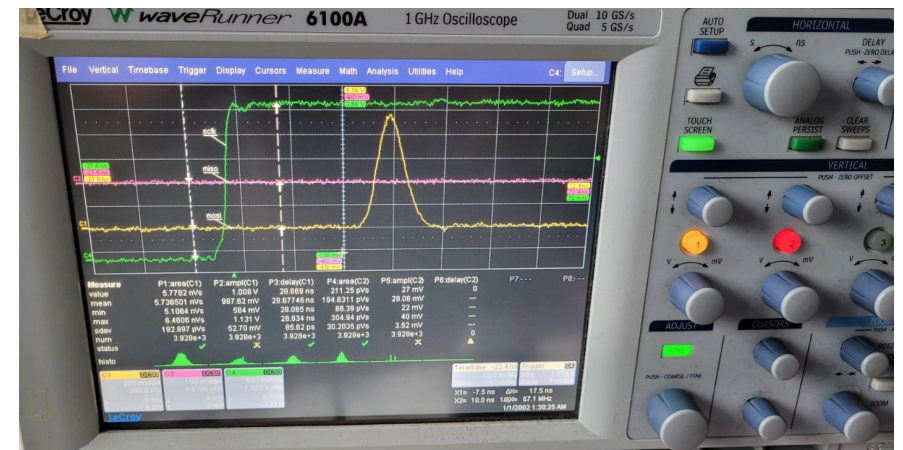
- PMT system test with
 - CAEN LED driver SP5601 (wavelength ~ 400 nm) with fine tunable LED intensity
 - scint. fiber splitter
 - two PMTs (for relative QE meas.)



no preamplifier

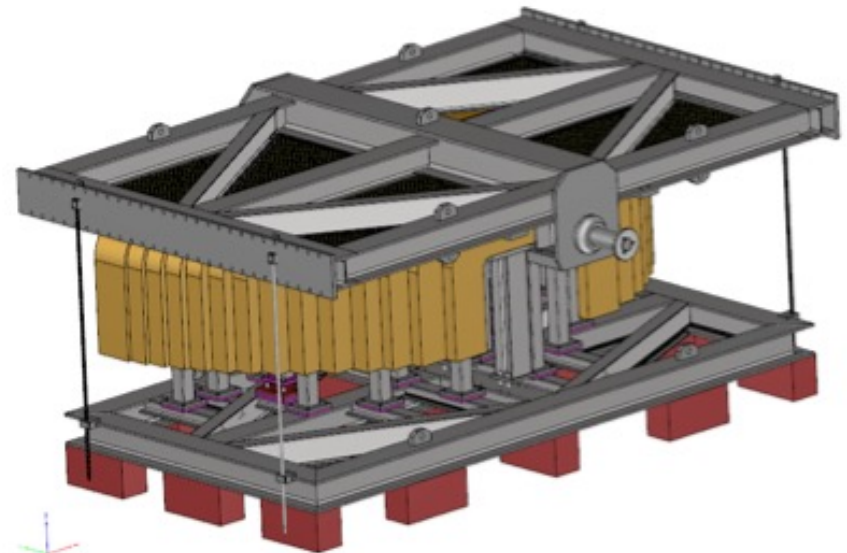
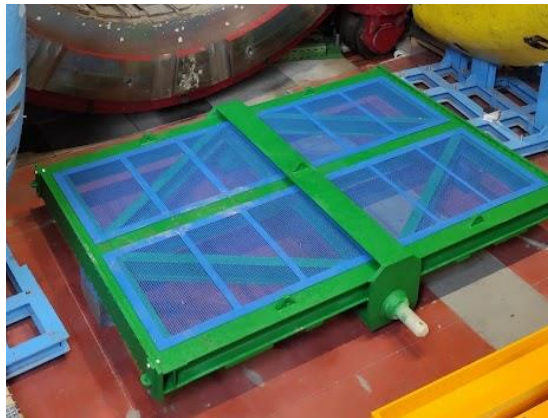
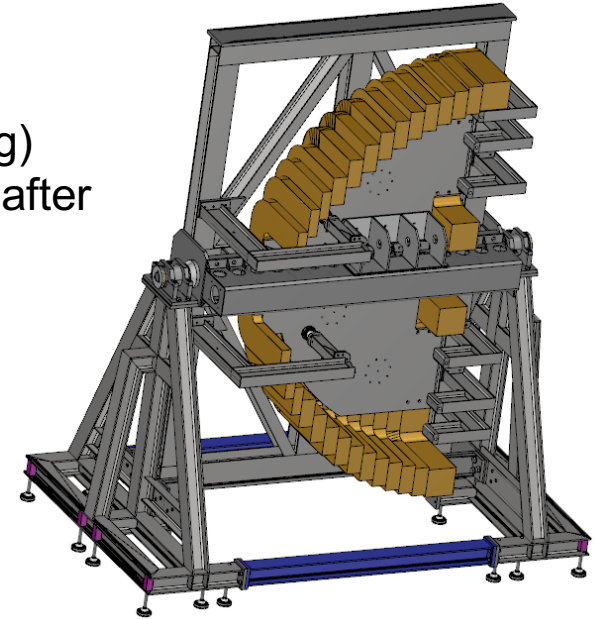


with preamplifier



Preparation of dismantling ECAL End-caps

- A modification to the base holding the frame has been requested by the company issuing the safety certification (UE + US)
=> iron plates to be soldered to the base to fix the base to the floor; modification just started (due also to delay caused by KLOE hall flooding)
- The document of the detailed procedure is being completed by F. Noto, after a first meeting with LNF safety office on 9th September.
- Start of the test of end-cap dismantling procedure postponed.



KLOE-to-SAND Project Time Schedule



Jul '22 | Sep '22 | Nov '22 | Jan '23 | Mar '23 | May '23 | Jul '23 | Sep '23 | Nov '23 | Jan '24 | Mar '24 | May '24 | **Today** | Jul '24 | Sep '24 | Nov '24 | Jan '25 | Mar '25 | May '25 | Jul '25 | Sep '25 | Nov '25 | Jan '26 | Mar '26 | May '26 | Jul '26 | Sep '26 | Nov '26 | Jan '27

Add tasks with dates to the timeline

