



Contribution ID: 24

Type: **not specified**

The INFN Test Facility for Large Magnets and Superconducting Lines

Monday 31 March 2025 10:40 (30 minutes)

Oral presentation (20 min) + Q&A (10 min)

The Test Facility for Large Magnets and Superconducting Lines (TFML) in Salerno, Italy, is a state-of-the-art laboratory dedicated to the development and testing of superconducting technologies. Established and operated by the National Institute of Nuclear Physics (INFN) in collaboration with the University of Salerno's Physics Department TFML supports the THOR (Test in Horizontal) program since 2020. This is dedicated to the Site Acceptance Tests (SAT) of quadrupole doublet modules for the SIS100 synchrotron, part of the FAIR facility under construction at GSI in Darmstadt. The existing facility includes a cryogenic plant capable of cooling magnets to 4.5 K using a supercritical helium stream at 3 bar.

Since 2022, within the IRIS (Innovative Research Infrastructure on Applied Superconductivity) program, a second building is under construction in Salerno, adjacent to the already existing facility. The new facility will be dedicated to the test of a 130m long superconducting cable based on MgB₂, capable to carry up to 40 kA at 25 kV operating at 20 K Helium gas.

The unique features and technical specifications of the facility, along with an overview of its current infrastructure, ongoing activities and developments are presented.

Presenter: CHIUCHIOLO, Antonella (Istituto Nazionale di Fisica Nucleare)