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## **C2Po2A-09 [19]: Compact cryogenic test stand for superconducting magnets characterization**

*Tuesday, July 23, 2019 1:30 PM (2 hours)*

A new compact test facility for testing compact superconducting magnets down to 4.2 K using cryogen fluids has been developed at CEA Paris-Saclay. This facility has been constructed to test the solenoid magnets to be produced for the next Soreq particle accelerator (SARAF) project. The magnets are cooled with liquid helium at 4.2 K and the liquid bath can be pressurized up to 2 bars to regulate the temperature of the magnet in working conditions. This facility is able to measure and dissociate the heat loads coming from the magnet and the current leads by flow-metry. The voltage of the solenoids and their current leads are measured using National Instrument devices and monitored with a Labview program to identify and analyze eventual quenches. The magnetic performance of the magnets are also monitored dynamically with 3D hall probes. Finally more than a dozen of cryogenic temperature sensors are used to characterize the thermal evolution of the magnet and its current leads during the test. This paper presents the compact facility in details and the first results obtained on the magnet prototype.

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