
Contribution ID: **880** Type: **Poster**

# Wed-Af-Po.11-06: Thermal hydraulic simulation of Tcs test in the ITER Magnet Cold test facility

*Wednesday 2 July 2025 14:30 (2 hours)*

The Magnet Cold Test Bench (MCTB) will be assembled and commissioned in 2025 with existing ITER systems (Cold terminal Box, Cryogenic system,) and new components (cryostat, power supply, interconnection valve box). The objective is to test as many TF coils as possible in the MCTB without impacting the assembly schedule in the pit. ITER TF magnet system consist of 18 coils. The Current sharing temperature (Tcs) test is planned only for the spare coil TF19 to check the performance in the stand-alone configuration at half field (6 T) and nominal current 68 kA.
In order to prepare the Tcs test proposal for the TF coil in the MCTB, a dedicated TF thermal hydraulic model is developed with the Supermagnet code. The model has been developed to assess the strategy of increasing the inlet temperature with a resistive heater up to the estimated Tcs at about 11 K in the MCTB configuration. To avoid the quench occurring during the Tcs test, the test procedures will be investigated in order to achieve an accurate temperature control.

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**Session Classification:** Wed-Af-Po.11 - Modelling of Fusion Conductors and Coils I