TIDM² x SC Magnets Lecture Series 2025



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ITER magnet testing

Monday 16 June 2025 17:40 (1 hour)

About the lecture:

The presentation shares experience gained from magnets testing, especially ITER, starting from the ITER EDA (Engineering Design Activities), then during construction phase of ITER to the latest tests of the CS modules that will go into ITER machine. Rational and justification for tests, things that only testing of the large magnets can reveal are discussed. Correlation between the test results of the components and predictions for performance of the assembly is important part of the analyses.

Necessary equipment in the test facilities, essential features and lessons learned are discussed. Special attention is paid to the quench detection and quench protection in the large test facilities.

About the author:

Started in the field of Applied superconductivity in 1977 as an analyst of stability, thermo-hydraulic, mechanical and magnetic and electrical field analyses, also carried out analyses of the test data from superconducting conductors and magnets. Have been working on fusion magnets since 1977 and on ITER since the beginning of the project in 1985. Among R&D, conductor development, design, fabrication, commissioning and other activities I was involved in testing of about 20 large magnets and in most campaigns as a Testing Group Chairman, but also as a test program leader, instrumentation and analyses responsible engineer and a Test Reports compiler and editor. Participated in construction and operation of two large Test facilities at LLNL and GA.

Presenter: MARTOVETSKY, Nicolai (ORNL)