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High Temperature Superconductor coil testing

Thursday 12 June 2025 17:40 (1 hour)

About the lecture:

Testing superconducting coils is always a challenge and of inestimable value to the magnet designer and manufacturer. It is also the last step in magnet production process, and the most exciting one!

In this lecture, I will provide an introduction to testing superconducting materials, focusing on various samples and HTS coils. Different types of test setups will be presented, from a simple LN₂ bath to cryogen-free test stand. Topics such as instrumentation, data acquisition system and quench detection will be discussed. Finally, real-world examples of various scenarios will be presented and failure cases explained. If you want to start the adventure of testing superconducting materials this lecture is for you!

About the speaker:

Michał Duda received his PhD in solid state physics from the AGH University of Science and Technology in Krakow in 2010. Since then, he worked at DESY in Hamburg performing magnetic measurements of superconducting magnets for European XFEL. In 2017, he joined the CERN SM18 team testing prototypes of superconducting magnets for the HL-LHC project. Since 2020, he has been in charge of the superconducting magnets test lab at PSI.

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