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## Development and testing optical fiber quench detection for fusion magnets

*Wednesday 18 June 2025 16:30 (1 hour)*

### About the lecture:

This presentation highlights the critical need for co-development and co-testing of quench detection (QD) systems with superconducting magnets in fusion environments. For several years now, optical fiber based quench detection has shown much promise as an alternative quench detection technique in HTS magnets. The fusion environment poses unique challenges to both the HTS magnet and any quench detection system. The presentation details how integrating HTS magnet and fiber-based QD development and testing, through rapid sub-scale testing and joint integration campaigns like the SPARC Central Solenoid Model Coil (CSMC) project, can address fusion challenges and drive innovative solutions.

### About the speaker:

Dr. Erica Salazar has devoted much of her career to the development of innovative superconducting magnet technology for fusion energy applications. Erica is currently a Magnet Systems Senior Manager in the R&D division of Commonwealth Fusion Systems where she focuses on high temperature superconducting magnets and quench detection systems. Erica received her doctoral degree in the Department of Nuclear Science and Engineering at MIT working at the Plasma Science and Fusion Center. Her doctoral research focused on high temperature superconducting magnet design and research for the SPARC project. Prior to MIT, Erica worked at General Atomics as a mechanical engineer and process manager on the ITER Central Solenoid superconducting magnet manufacturing project

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