



Tutorial 12: Cryogenics

Saturday 20 September 2025 15:30 (1h 30m)

Superconducting Radio Frequency (SRF) technology relies on cryogenics to achieve and maintain the ultra-low temperatures required for efficient accelerator operation. This tutorial introduces the essential principles of cryogenics for SRF applications, aimed at providing participants with a foundation to support their work in the field. Topics include the role of cryogenics in SRF technology, the basic laws of thermodynamics, and an overview of refrigeration and liquefaction cycles. Special emphasis will be placed on the unique properties of helium and its importance for SRF systems. The lecture will also address how heat transfer is managed in cryogenic environments, drawing on examples from cryogenic systems at the European Spallation Source (ESS). In addition, operational aspects such as: safety considerations, system control, and monitoring will be highlighted.

I have read and accept the Privacy Policy Statement

Yes

Footnotes

Funding Agency

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Session Classification: Tutorials (Day 3)

Track Classification: General