

Magnetic refrigeration down to 1.6 K for FCC-ee

Thursday 14 April 2016 08:30 (20 minutes)

High-field superconducting RF cavities of the FCC-ee require a kW-range superfluid helium refrigeration down to 1.6 K. A magnetic refrigeration working below 4.2 K can be an alternative to the present compression/expansion helium refrigeration. The significant difference between this application and previous magnetic refrigerator studies is its large cooling power, even 1000 times larger than the other designs. Principles of magnetic refrigeration will be recalled and preliminary designs will be compared for a kW-range magnetic refrigerator down to 1.6 K.

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Session Classification: Technologies R&D

Track Classification: Technologies