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Tue-Af-Po2.16-09 [23]: Superconducting transformer for superconducting cable research and development

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Abstract

A facility capable of testing superconducting cables with current of tens of kA is essential for the development of large superconducting magnets. A superconducting transformer (SCT) is a suitable choice as a high DC current source for testing superconducting cables. In this work, we will present our experimental results of a SCT that was originally developed by Lawrence Berkeley National Laboratory to reach a maximum output current of 50 kA. The SCT is characterized first at 4.2 K in zero magnetic field. Its behaviors during a sample quench at different current levels is studied. We will also present its performances in high magnetic field measured on a SC cable in a 12 T split magnet at the National High Magnetic Field Laboratory.

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