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# Thu-Mo-Po4.09-02 [64]: Development and test results of a superconducting joint resistance evaluation system

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Superconducting joints are extremely important for the application of HTS magnets. Recently, various joint techniques have been proposed for connection between HTS conductors. However, suitable evaluation methods for joint resistance ($R_j$) have not been established. We have developed a joint resistance evaluation system [1]. The system consists of an HTS sample with a joint, a current injection coil, and a split-pair superconducting magnet. The HTS sample and the magnet are conductively cooled by cryocoolers. The sample is composed of a one- or several-turn closed-loop. $R_j$ of the sample is evaluated by a decay of the induced current in an LR closed circuit. Using the system, the joint resistances ranging $10^{-14}$-$10^{-7}$ $\Omega$ were quantitatively evaluated as a function of current magnitude, temperature, magnetic field and its orientation. In this paper, we report the commissioning results of the system and some latest joint resistance evaluation results.

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[1] K. Kobayashi et al., Supercond. Sci. Technol. to be submitted.

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