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Development of monitoring system for the muon rotating target using an infrared camera

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It is important to measure the temperature of the muon-production rotating target (hereinafter referred to as “rotating target”) in order to detect problems of rotating target quickly.

Thermocouples have been installed on the cooling jacket to measure the temperature rise due to thermal radiation from the rotating target. Since the time constant of the thermocouples is on the order of minutes, it is not possible to stop the accelerator quickly in case of a significant temperature rise. In order to construct a rapid temperature detection system for rotating targets, we have installed an infrared camera.

We successfully measured temperature distribution of the rotating target during the 1-MW operation observed by the infrared camera.

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