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Operation status of superconducting RF system in SuperKEKB with high beam current

Wednesday 4 June 2025 16:00 (2 hours)

SuperKEKB continues the operation with the aim of achieving high luminosity. The beam current has already exceeded 1.3 A in the electron ring and 1.6 A in the positron ring. Eight superconducting RF (SRF) systems are operating in the electron ring. The SRF system including cavities, input couplers, HOM dampers, and so on was designed for KEKB and modified to handle the higher beam current of SuperKEKB. The SRF system is operating stably without any major problems. There are many issues that need to be resolved, such as large beam power and HOM power increasing with beam current, and various risks of failure due to aging of the system. To maintain the stable operation of the SRF system, it is important to establish an anomaly diagnosis system and methods for measuring and recovering the performance of the system. We will report on the operating status of the SRF system in the high beam current and countermeasures for the issues

Footnotes

Paper preparation format

LaTeX

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Author: NISHIWAKI, Michiru (High Energy Accelerator Research Organization)

Co-authors: AKAI, Kazunori (High Energy Accelerator Research Organization); MITSUNOBU, Shinji (High Energy Accelerator Research Organization); FURUYA, Takaaki (High Energy Accelerator Research Organization); OKADA, Takafumi (High Energy Accelerator Research Organization); KOBAYASHI, Tetsuya (High Energy Accelerator Research Organization); MORITA, Yoshiyuki (High Energy Accelerator Research Organization)

Presenter: NISHIWAKI, Michiru (High Energy Accelerator Research Organization)

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