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Calibration of beam current monitors at J-PARC accelerator facility

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Accelerators at J-PARC, a high-intensity proton accelerator facility, consists of a 400 MeV linac, 3 GeV RCS, and 30 GeV MR. The RCS is aiming for steady operation with output beam power of 1 MW, while the MR has achieved its initial target of 750 kW by shortening its operating cycle, and further beam tunings and developments are underway to achieve the next target of 1.3 MW. At J-PARC, it is necessary to suppress beam losses to an extremely low level to suppress the activation of the accelerator devices, and thus it is essential to improve the measurement accuracy of beam loss and current monitors. Particularly in MR, with the significant improvement in beam power, there is a need to improve the measurement accuracy of the beam current monitors from 1% at the present. Accordingly, the current monitors have been calibrated regularly, but have not been carried out in a unified manner throughout the accelerators. In this presentation, we will report on the calibration methods and its accuracy.

Footnotes

Funding Agency

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Yes

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