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The bunch length monitor based on CSR in SXFEL

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Monitoring the beam length and maintaining stability during operation is crucial for Free Electron Laser (FEL) user facilities. A monitor based on Coherent Synchrotron Radiation (CSR) is an ideal candidate, and it has been successfully developed at the Shanghai X-ray Free Electron Laser (SXFEL). This article presents the basic principles, system configuration, and experimental results. The results show that the monitor is capable of measuring the bunch length within a range of 0.6 ps to 1.4 ps, achieving a precision better than 10%.

Footnotes

Funding Agency

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