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Design of beam spreader system at S3FEL

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Shenzhen Superconducting Soft X-Ray Free Electron Laser (S3FEL) is a high-repetition-rate and high-brightness soft X-ray facility under construction. It is designed to support multiple user experiments simultaneously, each requiring different undulator lines and FEL parameters. This capability is made possible by the beam spreader system, which plays a pivotal role in transporting the electron beam from the exit of the LINAC to multiple undulator lines, predominantly facilitated by the Kicker-Septum system. The system eliminates transverse dispersion, coherent synchrotron radiation, and adopts an isochronous design, all critical for preserving beam quality. This paper outlines the basic layout and lattice design of the beam spreader, presenting the corresponding simulation results.

Footnotes

Paper preparation format

Region represented

Asia

Funding Agency

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