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Physical design for Shenzhen superconducting soft X-Ray free-electron laser (S3FEL)

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Shenzhen Superconducting Soft X-Ray Free-electron Laser (S3FEL) is a newly proposed high repetition-rate X-ray FEL facility. It will be located at Guangming Science City in Shenzhen with a total length of 1.7 km. The electron beam is generated from a VHF photocathode gun and accelerated to 2.5 GeV through a superconducting RF linac. At initial phase, it is planned to build four undulator lines with two of them working at the principle of SASE and another two working at EEHG. S3FEL aims at generating X-rays and EUV FELs between 1 and 30 nm at a rate up to 1 MHz to facilitate various scientific applications. This paper describes the physical design of S3FEL.

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Footnotes

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