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Development status of the fiber length stabilizers for the laser arrival-time measurement

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The Shanghai soft X-ray Free-Electron Laser facility (SXFEL) is a fourth-generation linac-based light source, capable of producing X-ray pulses with duration of tens of femtosecond. The photocathode laser and the seed laser for external seeding FEL therefore have tight requirements for relative arrival time to the machine and electron bunch. To reach required energy and wavelength to drive photocathode, as well as for external seeding FEL, further optical amplification and frequency conversion is needed. the femtosecond-stable pulsed optical reference, which are delivered via fiber length stabilizers. In this paper, we present the development status of the fiber length stabilizers for the laser-arrival time measurement.

Footnotes

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Author: WANG, Jinguo (Shanghai Advanced Research Institute)

Co-authors: LIU, Bo (shanghai advanced research institute, chinese academy of sciences); WU, Bowei (Shanghai Institute of Applied Physics, Chinese Academy of Sciences)

Presenter: WANG, Jinguo (Shanghai Advanced Research Institute)

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