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The generation of ultrafast seeded free-electron lasers at S3FEL

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The field of ultrafast science has seen substantial growth over the past decade. High-power, ultrafast free-electron lasers (FELs) have become essential tools across various scientific disciplines, including physics, chemistry, and biology. The shorter pulse durations enable enhanced temporal resolution in pump-probe experiments. This paper introduces methods for generating ultrafast seeded free-electron lasers at the Shenzhen Superconducting Soft X-Ray Free-Electron Laser (S3FEL). The mechanisms underlying the proposed approaches are discussed in detail, along with corresponding simulation results.

Footnotes

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