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Electron beam shaping by laser heater for attosecond pulse duration X-ray free electron laser

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We experimentally and numerically demonstrate that electron beam energy spread produced by laser heating can be used for shaping electron beam current profile. In particular, we introduce this method for generating attosecond pulse duration X-ray free electron laser. Electron beam scattering material (slotted foil) is additionally used for final selection of the effective current profile. This study is based on the beamline design of the hard x-ray free electron laser at Pohang Accelerator Laboratory (PAL).

Footnotes

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Paper preparation format

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Asia

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