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EEHG and HGHG FEL performance in the extreme ultraviolet spectral range

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Fermi is a seeded FEL and has been operating in High Gain Harmonic Generation mode for more than a decade. Recently, the FERMI FEL-1 line, which normally delivers photons from 100 nm to 20 nm, has been upgraded to operate in Echo Enabled Harmonic Generation mode, extending the spectral range down to 10 nm and even beyond.

A measurement campaign was carried out to characterise the FEL performance in EEHG in terms of pulse energy and spectral quality. This provided a unique opportunity to compare experimentally the FEL performance in EEHG and HGHG under very similar beam and diagnostic conditions.

Footnotes

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