



Contribution ID: 296 Contribution code: MOAI091

Type: **Invited Oral Presentation**

FERMI 2.0: status and perspectives for the upgrade of FERMI

Monday 19 August 2024 11:10 (10 minutes)

FERMI was built as a facility using high-gain harmonic generation to provide coherent light down to the soft X-ray region of the spectrum. After some fourteen years of operation, a number of possibilities have been exploited that go beyond the simple control of the spectral quality of the emitted pulses. In fact, the seed has offered the possibility to control pulse duration and phase, intrapulse polarization, to generate multiple pulses for the implementation of multiple colour schemes, to coherently control and to synchronise ultrashort pulses to an unprecedented level with an external laser system. FERMI has now entered an upgrade phase to FERMI 2.0. The ultimate goal of the upgrade plan is to extend the spectral range of the facility to cover the water window and beyond, and to reduce the minimum pulse duration below the characteristic lifetime of the light element core hole electrons, while preserving the uniqueness of FERMI: the possibility to control the properties of the radiation by seeding the FEL with an external laser system. An overview of the current status and future perspectives of FERMI is presented.

Footnotes

Funding Agency

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Session Classification: First Lasing, New FEL projects and Facility Reports

Track Classification: New FEL projects and Facility Reports