Contribution ID: **70** Contribution code: **TUP070-TUB** Type: **Poster Presentation**

Analysis of a decade of pioneering user operation at the FERMI Free-Electron Laser facility

Tuesday 20 August 2024 20:40 (20 minutes)

This study presents a comprehensive analysis of user operations at the FERMI free-electron laser (FEL) facility spanning a period of 10 years. Located in Trieste, Italy, FERMI is the first seeded FEL light source dedicated to users, delivering since 2011 high quality extreme ultraviolet and soft X-ray beams for a wide range of scientific experiments based on diffraction, scattering and spectroscopic techniques. The highly coherent, ultra-short, ultra-bright, almost Fourier-transform limited FEL light pulses can be synchronized to an external laser with unprecedented precision and controlled in phase, coherence, wavelength(s), duration, line-width and polarization, all with remarkable reproducibility and stability. The analysis of the FEL parameters made available to the FERMI user community over the years demonstrates the extensive exploitation of its unique potential and the evolution of the FEL operating modes, highlighting FERMI's pioneering role in cutting-edge scientific research, as well as its commitment to continuous innovation and international collaboration.

Footnotes

Funding Agency

Authors: SPEZZANI, Carlo (Elettra-Sincrotrone Trieste S.C.p.A.); ALLARIA, Enrico (Elettra-Sincrotrone Trieste S.C.p.A.); GALASSI, Fabio (Elettra-Sincrotrone Trieste S.C.p.A.); PENCO, Giuseppe (Elettra-Sincrotrone Trieste S.C.p.A.); BADANO, Laura (Elettra-Sincrotrone Trieste S.C.p.A.); Dr GIANNESSI, Luca (Istituto Nazionale di Fisica Nucleare)

Presenter: BADANO, Laura (Elettra-Sincrotrone Trieste S.C.p.A.)

Session Classification: Poster session

Track Classification: Seeded FEL