Contribution ID: **149** Contribution code: **TUP149-TUC** Type: **Poster Presentation**

The XUV High-Gain FEL Oscillator Project at FLASH

Tuesday 20 August 2024 20:40 (20 minutes)

Externally seeded FELs deliver fully coherent radiation down to the soft X-Rays with high shot-to-shot stability. They are, however, limited in repetition rate by the available seed laser systems and highest achievable harmonic.
Cavity-based FELs, on the other hand, have the potential to generate fully coherent FEL radiation at the maximum repetition rate supported by superconducting accelerators.
The XRAY Project was aimed at setting up such a cavity-based high-gain FEL oscillator at 13.5 nm wavelength and 3 MHz repetition rate. In this contribution, we report on the experimental campaign carried out at the seeding infrastructure at FLASH.

Footnotes

Funding Agency

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Session Classification: Poster session

Track Classification: FEL oscillators & IR-FEL