

Contribution ID: 950

Type: Invited talk

Status of the FLASH2020+ Project

Wednesday 28 August 2024 16:55 (20 minutes)

The free-electron laser FLASH at DESY delivers femtosecond pulses of light from the vacuum ultraviolet to the soft X-ray domain at an average repetition rate of 5kHz. Pulses from the free electron laser can be split and delayed and combined with other sources such as optical lasers and an undulator THz source to perform ultra-fast time-resolved experiments. The FLASH facility allows for a large variety of experiments across various science disciplines and offers specially tailored combinations of beamlines and experimental instrumentation. The short-wavelength radiation of FLASH allows to deduce site- and element specific information on electron dynamics.

FLASH is currently undergoing an upgrade within the FLASH2020+ project, which will result in an externally seeded FEL source at high repetition rate. In the current shutdown, a complex electron optics, laser and undulator infrastructure is installed to accomplish this new source via high gain harmonic generation and echo enhanced harmonic generation. This presentation will highlight the technical challenges and opportunities. In addition, the talk will explore methods and science applications of the high coherence, stability, and increased spectral flux of this worldwide unique source.

I plan to submit also conference proceedings

Primary author: GÜHR, Markus (DESY)

Presenter: GÜHR, Markus (DESY)

Session Classification: Mikrosymposium 6/2: FELs: New facilities and Opportunitites