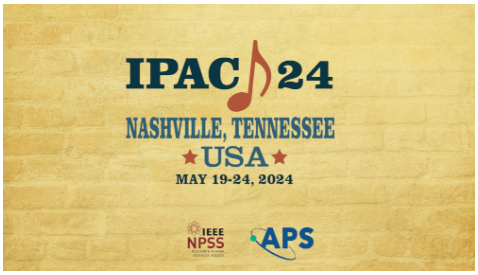

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New opportunities for excellent FEL experiments at FLASH

Monday, 20 May 2024 16:00 (2 hours)

The FLASH facility is currently undergoing a transformation to generate FEL radiation suitable for next generation user experiments. Here, the transition of FLASH1 from a SASE to an externally seeded FEL beamline is in main focus and will significantly expand the facilities capabilities. Near transform limited pulses at superior spectral and energy stability at full FLASH repetition rate of 1 MHz burst, together with variable polarization, will continue to broaden the facilities user community.
As a prerequisite the superconducting linear accelerator has been upgraded in a recent shutdown to improve stability and control of the electron bunches while also increasing the maximal electron beam energy to 1.35 GeV. For testing of the future undulator concept for the seeded beamline a shorter period prototype device employing also APPLE III configuration has been installed in the FLASH2 beamline as an afterburner to boost the third harmonic at variable polarization.
The increased wavelength range down to 1.33 nm along with before mentioned improvements already benefit current user experiments and preparatory seeding experiments undertaken within the Xseed environment.

Footnotes

Funding Agency

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Region represented

Europe

Primary author: SCHAPER, Lucas (Deutsches Elektronen-Synchrotron)

Co-authors: HARTL, Ingmar (Deutsches Elektronen-Synchrotron); GUEHR, Markus (Deutsches Elektronen-Synchrotron); Dr SCHREIBER, Siegfried (Deutsches Elektronen-Synchrotron)

Presenter: VOGT, Mathias (Deutsches Elektronen-Synchrotron)

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