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FLASH2020+: transformation of FLASH1 to a high repetition rate externally seeded FEL for users

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The FLASH2020+ project is driving the current transformation of the FLASH facility. The next step is the transition of FLASH1 from a SASE to a high repetition rate externally seeded FEL beamline and will significantly expand the facilities capabilities. The generation of near transform limited pulses at superior spectral and pulse energy stability at full FLASH repetition rate of 1 MHz burst together with variable polarization will continue to broaden the facilities user community. In a 14 month lasting shutdown, that started in June 2024, the complete FLASH1 beamline will be replaced by new hardware tailored to external seeding. By upgrading the linear accelerator in a preceding shutdown the necessary foundation regarding electron beam properties has already been enabled and is available to the benefit current user experiments. In this contribution we report on the FLASH2020+ incorporated existing and upcoming alterations to the FLASH facility as well as to project progress with respect to the current as well as following near- and midterm installations.

Footnotes

Funding Agency

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