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First Demonstration of Parallel Operation of a Seeded FEL and a SASE FEL

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The FLASH facility houses a superconducting linac powering two FEL beamlines with MHz repetition rate in 10 Hz bursts. Within the FLASH2020+ project, which is taking care of facility development, one major aspect is the transformation of one of the two FEL beam lines to deliver externally seeded fully coherent FEL pulses to photon user experiments. At the same time the second beam line will use the SASE principle to provide photon pulses of different properties to users.
Since the electron beam phase space conducive for SASE or seeded operation is drastically different, here a proof-of-principle experiment using the existing experimental seeding hardware has been performed demonstrating the possibility of simultaneous operation.
In this contribution we will describe the setup of the experiment and accelerator, and discuss the chances and limitations of the experimental seeding hardware. Finally, we will discuss the results and their implications also for the FLASH2020+ project.

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