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## The New FLASH1 Undulator Beamline for the FLASH2020+ Project

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The 2nd stage of the FLASH2020+ project at DESY will be an upgrade of the FLASH1 beamline to enable HGHG and EEHG seeding with two modulator-chicane stages, and a radiator section with 11 Apple-III undulators to enable FEL radiation with controllable polarization. A key feature of FLASH, namely the capability of providing several thousand FEL pulses in the extreme UV and soft X-ray must not be compromised.

Downstream of the radiator the beamline houses longitudinal diagnostics, a double bend (quasi-) achromat to separate the electrons from the photons and divert the electron beamline from the photon diagnostics, a post-compressor, a THz-Undulator (requires an electron beam that is compressed more strongly than for seeding), and finally the dump line, capable of safely aborting up to 100 kW electron beam power.

This article describes the conceptional and some technical details of the beamline with emphasis on the upstream part (modulators and radiator) designed for seeding.

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