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Commissioning of the 2nd Bunch Compression Chicane for FLASH2020+

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In the framework of the injector upgrade, which has been completed in 2022 as the first stage of the FLASH2020+ project, a new second bunch compression chicane has been redesigned and installed at the FEL user facility FLASH. The old S-type chicane with a flat vacuum chamber design has been replaced with a movable C-chicane which round vacuum chambers. The inner dipoles and corresponding electron beamline can be moved from straight beam transport to a maximum deflection angle of 6 degrees which offers a wide range of longitudinal dispersion for optimised bunch compression schemes for both SASE and externally seeded FEL operation. The latter is foreseen from 2025 onwards after completion of the second stage of the FLASH2020+ project. In this paper, we report the technical details of the movable chicane as well as its parameter space. First results of beam commissioning are presented.

Funding Agency

Footnotes

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Yes

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