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First commissioning of the corrector quadrupoles in the 2nd bunch compression chicane at FLASH

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FLASH, the superconducting XUV and soft X-ray FEL is undergoing a substantial upgrade (FLASH2020+) with two long shutdowns 2021/22 and 2024/25. In the 1st shutdown, FLASH's 2nd bunch compression chicane (BC2) has been completely redesigned for the FLASH2020+ upgrade project. The redesign allowed the installation of two quad/skew-quad packs in each of the arms of the 4-dipole (C-type) chicane. With these corrector quadrupoles it should be possible to partially compensate linear correlations between the transverse centroids and the longitudinal position inside the bunch, so called bunch-tilts. During the limited commissioning/development shifts in a year of operation devoted to maximizing user hours we started measuring the impact of the quads on the bunch tilts and the unavoidable effects on dispersion closure and beam optics. In this contribution we report first results.

Footnotes

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LaTeX

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Europe

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