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Transverse deflecting cavities for short X-ray pulses at Elettra 2.0

Monday, 8 May 2023 16:30 (2 hours)

We investigate the upgrade of Elettra 2.0 to radio-frequency transverse deflecting cavities generating a steady-state vertical deflection of selected electron bunches. The study demonstrates the feasibility of 1 to few ps-long x-ray pulses at MHz repetition rate provided simultaneously to several beamlines, and transparent to the standard multi-bunch operation. The short pulse exhibits total flux at 1-10% level of the standard single bunch emission, and transverse coherence preserved in both transverse planes up to approximately 0.5 keV.

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Footnotes

I have read and accept the Privacy Policy Statement

Yes

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