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Nonlinear bunch compressors for DALI

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HZDR is planning a successor facility for the ELBE radiation source: the Dresden Advanced Light Infrastructure DALI. DALI will include a positron source, an MeV UED instrument, an optical klystron mid-IR source for 3 to 30 THz, requiring bunch lengths of 10 to 20 wavelengths, and a superradiant THz source for frequencies up to 3 THz. The bunch length for the superradiant source needs to be shorter than the radiation wavelength 100 μm , which is expected to require magnetic linearization.

Several options for the envisaged nonlinear bunch compressors will be discussed.

Summary

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