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Commissioning and experiments with a compact transverse deflecting system at FLUTE

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A Compact Transverse Deflecting System (Compact-TDS) designed for longitudinal electron bunch diagnostics in the femtosecond regime is presently undergoing commissioning at the Karlsruhe Institute of Technology (KIT). This technique, based on THz streaking with a Split-Ring Resonator (SRR), demands a high level of electron beam controllability and stability at the micrometer scale. To meet these requirements, the Ferninfrarot Linac- Und Test-Experiment (FLUTE) has undergone an upgrade in 2023, incorporating a new RF system equipped with a state-of-the-art modulator, RF photoinjector and solenoid magnet. In this contribution, we present first experiments conducted with the Compact-TDS at FLUTE, utilizing the enhanced RF setup.

Footnotes

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Europe

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