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Simulation studies on longitudinal beam dynamics manipulated by corrugated structures under different bunch length conditions at KARA

Sunday, 7 May 2023 16:00 (2 hours)

In the KIT storage ring KARA (Karlsruhe Research Accelerator), two parallel plates with periodic rectangular corrugations are planned to be installed. These plates will be used for impedance manipulation to study and eventually control the electron beam dynamics and the emitted coherent synchrotron radiation (CSR). In this contribution, we present simulation results showing the influence of different corrugated structures on the longitudinal beam dynamics and how this influence depends on the machine settings in the low momentum compaction regime, which are related to the bunch length changes.

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Footnotes

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Yes

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