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Microbunching threshold manipulation by a corrugated structure impedance at KARA

Monday, 20 May 2024 16:00 (2 hours)

Two parallel corrugated plates will be installed at the KIT storage ring KARA (KArlsruhe Research Accelerator). This impedance manipulation structure will be used to study and eventually control the electron beam dynamics and the emitted coherent synchrotron radiation (CSR). In this contribution, we present the impedance that is most effective to manipulate the threshold of the microbunching instability for different machine settings. Furthermore, it will be shown, how the resonance frequency of this impedance is related to the spectrum of the substructures in the electron bunches.

Footnotes

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