Radiation from Relativistic Electrons in Periodic Structures "RREPS-15"



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The Source of THz Radiation Based on Dielectric Waveguide Excited by Sequence of Electron Bunches

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We present new method of THz Cherenkov radiation excited in dielectric waveguide by relativistic electron bunches. The sequence of bunches generates monochromatic radiation. The frequency of radiation is defined by the distance separation between the bunches. The studies were carried by using the original updated BBU-3000 code which permits to take into account additional options: quadrupole focusing system, group velocity, dielectric material attenuation. With this paper, we present our algorithm for optimizing the number of bunches and its positions in sequence for generation of narrow band high power Cherenkov THz radiation.

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