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PS2-12: Energy Losses of Positrons in Wiggler Nanotubes and Spectrum of Emitted Photons

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We investigate the undulator radiation from relativistic positrons channeled in wiggler nanotube. It is shown that the main contribution to the radiation intensity comes from higher harmonics. The energy range of the total spectrum of the number of emitted photons is wide. Both the number of emitted photons and the radiation angle do not depend on the photon energy. However, the spectral distribution of the number of photons depends on the azimuthal angle. It has a maximum in the plane of oscillations, which gradually disappears when the angle is approaching $\pi/4$. Spectrum has the form of lunates symmetrically disposed with respect to the nanotube axis. The radiation intensity increases linearly with increasing photon energy. Energy losses of the positron on the total radiation of higher harmonics are significant.

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