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Radiation from Electrons Channeled in the System of Fan-Oriented Half-Wavelength Crystals

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When a charged particle penetrating through the half-wavelength crystals (HWC) it experiences a half of the channeling oscillation. The crystal planes deflect the beam, i.e. mirror-reflection of the beam. The mirror-reflection phenomenon for 2 MeV protons in a half-wavelength Si crystal has been previously proved [1]. At relativistic energies, the mirroring effect was observed for 400 GeV protons at CERN-SPS [2]. The existence of the mirroring effect for negative charged particles at HWC channeling was experimentally demonstrated at the SAGA-LS for 255 MeV electrons [3-5].
In the work [6] the angular distributions and trajectories of relativistic ions channeled in the system of fan-oriented Si and W HWCs are numerislly calculated. Simulations revealed that trajectories has a specific shape in the form of arc.
In this study, we present the numerical calculations of the channeling radiations from relativistic electrons in a such system fan-oriented HWCs.

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