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## Undulator radiation and energy losses of a channeled positron in the crystalline wiggler

Crystalline undulator radiation (CUR) is formed by a planar-channeled relativistic positron between periodically curved crystallographic planes [1, 2]. Both amplitude and spatial period of crystalline undulator are much larger than amplitude and a spatial period of the positron oscillation [3]. Taking into account availability of medium polarization, the spontaneous CUR has an energy threshold as well as an amplitude threshold [4]. For the positron beam which density and energy are exceed certain values, one obtains stimulated CUR. In this paper we are investigating the problem of the undulator radiation in the crystalline wiggler (CW). Because the parameter of the wiggler is much greater than unity, the main contribution in radiation comes from the higher harmonics, the spectra of which overlap. The radiation is concentrated in a solid angle, whose center is in the plane of the positron motion. Polar angles of radiation are located around a small angle with the width of the same order. The frequency distribution of the photon number does not depend on the energy of photons. In crystalline wiggler the channeled positron loses a significant part of it's energy.

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