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## Parametric radiation of electrons moving in a crystal along its surface

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Motion of charged particles in a crystal is followed by the radiation due to scattering of Coulomb field of the particle on the periodical crystal grating. In X-ray range this radiation called PXR and is well studied both theoretically and experimentally. However, comparative weakness due to absorption of X-rays in target material hampers its practical applications. In article [1] it was proposed and in [2] shown experimentally that PXR becomes considerably more intensive when generated in thin surface layer at grazing incidence of electrons owing to shorter way for radiation in the material.

In this work we propose to use the skimming flight of the charged particles beam over the crystal surface, when part of the beam moves inside the target and the other part is outside. For amorphous target the solution of this problem was reported in [3]. For crystal target it looks to be a promising scheme allowing providing the most possibly long particles trajectories inside the crystal, and simultaneously the shortest way out for the radiation. As the first step for theoretical description in this work we investigate the radiation produced by a charged particle moving under the crystal surface at a fixed distance to it.

1. N.N. Nasonov et al, NIM B 251, 96 (2006).
2. A.N. Eliseev et al, JETP Letters 90, 438 (2009).
3. D.Yu. Sergeeva, A.A. Tishchenko, Proc. of FEL 2014, TUPO13, 378 (2015).

**Author:** SERGEEVA, Daria (National Research Nuclear University (MEPhI))

**Co-authors:** TISHCHENKO, Alexey (National Research Nuclear University (MEPhI)); Prof. STRIKHANOV, Mikhail (National Research Nuclear University "MEPhI", Moscow, Russia)

**Presenter:** SERGEEVA, Daria (National Research Nuclear University (MEPhI))

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