

Radiation from Relativistic Electrons in Periodic Structures "RREPS-23" & Electron, Positron, Neutron and X-ray Scattering under External Influences "Meghri-23"



Contribution ID: 161

Type: Poster

Angular distribution of non-dipole axial channeling radiation

Monday 18 September 2023 17:18 (1 minute)

In our paper [1] we considered the non-dipolarity of axial channeling radiation (CR) generated in a tungsten single crystal at electron-beam energies of several GeV. It was shown that the non-dipole approximation results in a considerable variation of the CR spectrum. In this report, we explain this variation by means of the CR angular distribution calculation. Within the dipole approximation, CR is emitted in forward direction. Angular distribution of the non-dipole CR shows that also a sideward component occurs that is shown to be responsible for radiation spectrum variations.

[1] W. Wagner, A. A. Savchenko, B. Azadegan, and M. Shafiee, Nondipolarity of axial channeling radiation at GeV beam energies, Phys. Rev. Accel. Beams 22, 054502 (2019)

Author: SAVCHENKO, Aleksandr (National Research Nuclear University MEPhI (RU); Belgorod State University (RU))

Co-author: WAGNER, Wolfgang (HZDR Dresden)

Presenter: SAVCHENKO, Aleksandr (National Research Nuclear University MEPhI (RU); Belgorod State University (RU))

Session Classification: Poster session I

Track Classification: e^-/e^+ beams interaction in solids: Parametric X-ray Radiation, Channeling Radiation