Radiation from Relativistic Electrons in Periodic Structures "RREPS-15"



Contribution ID: 100

Type: Oral

## The Synchrotron Radiation of the Transversal Oscillator

Thursday 10 September 2015 13:45 (15 minutes)

As an application of general results of the radiation for a charge moving around a dielectric cylinder along a helical trajectory the projection of which on the plane perpendicular to the cylinder axis is an arbitrary closed curve, we study the radiation intensity of the transversal oscillation of rotating charged particle. We analyse the influence of the trajectory shift from the circular one on the characteristics of the radiation intensity.

Recently in this frame we have investigated the radiation intensity of a charged longitudinal oscillator moving along a helical trajectory around a dielectric cylinder. Similar to the case of coaxial circular motion under certain conditions for the parameters of the trajectory and dielectric cylinder strong narrow peaks appear in the angular distribution of the radiation intensity in the exterior medium. Instead of a single peak in the case of a uniform coaxial circular motion, for a longitudinal oscillator set of peaks appear. The increase of the oscillating amplitude leads to the increase of the number of the peaks and the peaks are shifted to the direction of small angles.

It is found out that for transversal oscillator one can get same results.

Author: KOTANJYAN, Anna (Yerevan State University)

**Co-author:** SAHARIAN, Aram (Yerevan State University)

Presenter: KOTANJYAN, Anna (Yerevan State University)

**Session Classification:** 1. General Aspects of Physical Phenomena and Processes Associated with Electromagnetic Radiation

**Track Classification:** 1. General Aspects of Physical Phenomena and Processes Associated with Electromagnetic Radiation