

Channeling 2018



Contribution ID: 33

Type: **Oral presentation**

Dispersion Relations for Different Types of Radiation from Periodic Structures: Similarities and Differences

Friday, 28 September 2018 11:20 (30 minutes)

In this report we discuss the similarities and differences of dispersion relations for different types of radiation in periodic structures –resonant transition radiation from multilayered stack of films, Smith-Purcell radiation, parametric X-ray radiation in crystals, undulator radiation. We show that the key factor here is the existence of frequency dependent dielectric permittivity leads to a new roots when the integrals with delta-functions are taken, which in their turn lead to the arising of new addend in the total expressions for spectral or angular distributions. The phenomenon of the so-called “end transition radiation” is discussed as well.

Primary authors: Dr TISHCHENKO, Alexey (National Research Nuclear University “MEPhI”); Ms SERGEEVA, Darya (National Research Nuclear University “MEPhI”)

Presenter: Dr TISHCHENKO, Alexey (National Research Nuclear University “MEPhI”)

Session Classification: W2.1 Advanced Generation of THz and X-ray beams