



Contribution ID: 89

Type: **not specified**

Excitation of evanescent wave by parametric X-ray radiation

Tuesday, 25 September 2012 16:50 (15 minutes)

Before, the evanescent X-ray wave was observed with use of characteristic X-rays as a source of radiation. Recently, V.P. Petukhov proposed the excitation of the evanescent wave by the Okorokov radiation of relativistic ions moving in a crystal [1]. In present paper we discuss possibilities for experimental observation of the evanescent wave excited by parametric X-ray radiation (PXR). The evanescent wave can be excited at the surface of the crystal in which the PXR is generated by relativistic charged particles. The reflection of the PXR should be emitted along the crystal surface. Conditions for excitation of the evanescent wave by the PXR reflection in Bragg and Laue cases with arbitrary direction of linear polarization are considered. Possibilities for experimental observation of the evanescent wave excited by the PXR in the both cases with use of the imaging plate [2] are discussed.

References

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2. Y. Takabayashi, A.V. Shchagin, Nucl. Instum. and Meth. B 278 (2012) 78-81.

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Session Classification: S4.1 X-ray Channeling & X-ray Optics

Track Classification: X-ray Channeling & X-ray Optics