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DOPPLER EFFECT IN A MEDIUM IN THE X-RAY RANGE

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Abstract

The Doppler effect in X-ray range emitted by a relativistic oscillator in a medium or by a relativistic charged particle moving in a periodical medium is considered. The radiation can be emitted, for instance, due to mechanisms of parametric X-ray radiation, coherent bremsstrahlung, undulator radiation in a crystalline undulator, transition radiation from a stack of foils. The splitting of the Doppler frequency emitted in the X-ray range that arises due to the influence of the medium is shown and discussed.

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