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Title:Time dependence of the intensity of parametric X-ray radiation produced by relativistic particles passing through crystals
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Abstract:The time evolution of parametric X-ray radiation (PXR) produced by a relativistic charged particle passing through a crystal is studied. It is shown that the duration of PXR pulses can be much longer than the particle flight time through the crystal. This enables a thorough experimental investigation of the time structure of parametric X-ray pulses generated by electron bunches available with modern accelerators. The complicated time structure of parametric radiation can also be observed in artificial (electromagnetic, photonic) crystals in optical, terahertz, and microwave ranges of wavelengths. 
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