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Study on polarization control of planar undulator system based on magnetic field modulation

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The fast polarization switching of undulator radiation has attracted more and more attention in recent years. Recently, a new method has been proposed for fast polarization switching up to kilohertz of undulator radiation by using magnetic field modulation generated from low-current electromagnetic coils. Through fast switching the power of coils, the radiation spectra of two undulators can be rapidly shifted into and out of the bandpass of a monochromator, enabling fast polarization switching for the user beamline. In this paper, we have studied the performance of the scheme using planar undulators. The performance of related parameters, such as photon flux, polarization degree, and spot distribution, will be reported.

Footnotes

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