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标题: Electric field detection of coherent synchrotron radiation in a storage ring generated using laser bunch slicing
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摘要: The electric field of coherent synchrotron radiation (CSR) generated by laser bunch slicing in a storage ring has been detected by an electro-optic sampling method. The gate pulses for sampling are sent through a large-mode-area photonic-crystal fiber. The observed electric field profile of the CSR is in good agreement with the spectrum of the CSR observed using Fourier transform far-infrared spectrometry, indicating good phase stability in the CSR. The longitudinal density profiles of electrons modulated by laser pulses were evaluated from the electric field profile. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.3694049]
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