200
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摘要: Terahertz radiation from ultrashort laser pulse interaction with a neutral gas target via ionization induced transverse currents is studied analytically and by particle-in-cell simulations. It is shown that the radiation amplitude and temporal shape depend not only on the driving laser parameters but also on the target parameters both for the forward and backward emissions. For given laser parameters, simply by tuning the gas length and the concentration of the effective ionized electrons, the terahertz temporal shape can be changed in scale with the gas length while keeping the radiation amplitude unchanged. This provides an easy way for terahertz radiation control for applications. (C) 2012 American Institute of Physics. [http://dx.doi.org/10.1063/1.4761941]
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