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标题: Modulation of electron trajectories inside a filament for single-scan coherent terahertz wave detection

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摘要: A synthesized fundamental optical beam and its second harmonic laser field is phase modulated to dynamically reshape the electron momentum distribution inside an air-plasma filament. The net electron motion becomes a combination of the initial laser "kick," from the remaining optical field, and the terahertz field present at the time of its ionization. The time dependent Schroumldinger equation is solved to map the net electron velocity distribution as the phase between the two color beams is changed, and single-scan coherent terahertz wave detection through air-plasma fluorescence is experimentally demonstrated. (C) 2012 American Institute of Physics. [<http://dx.doi.org/10.1063/1.3696027>]

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