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标题: Quasi-Phase-Matching High-Harmonic Radiation Using Chirped THz Pulses
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来源出版物: PHYSICAL REVIEW LETTERS 卷: 108 期: 19 文献号: 193903 DOI: 10.1103/PhysRevLett.108.193903 出版年: MAY 8 2012
在 Web of Science 中的被引频次: 0
被引频次合计: 0
引用的参考文献数: 24
摘要: High-order harmonic generation in the presence of a chirped THz pulse is investigated numerically with a complete 3D nonadiabatic model. The assisting THz pulse illuminates the high-order harmonic generation gas cell laterally inducing quasi-phase-matching. We demonstrate that it is possible to compensate the phase mismatch during propagation and extend the macroscopic cutoff of a propagated strong IR pulse to the single-dipole cutoff. We obtain 2 orders of magnitude increase in the harmonic efficiency of cutoff harmonics (approximate to 170 eV) using a THz pulse of constant wavelength, and a further factor of 3 enhancement when a chirped THz pulse is used.
入藏号: WOS:000303761600005
语种: English
文献类型: Article
KeyWords Plus: COUNTERPROPAGATING LIGHT; OPTICAL RECTIFICATION; GENERATION; FIELD
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出版商: AMER PHYSICAL SOC
出版商地址: ONE PHYSICS ELLIPSE, COLLEGE PK, MD 20740-3844 USA
Web of Science 分类: Physics, Multidisciplinary
学科类别: Physics
IDS 号: 938VN
ISSN: 0031-9007
29 字符的来源出版物名称缩写: PHYS REV LETT
ISO 来源出版物缩写: Phys. Rev. Lett.
来源出版物页码计数: 5