

Abstract Submitted
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Signatures of electron localization in ionization and high order harmonic generation from molecules A. JARON-BECKER, A. MORA, T. JOYCE, L. BAUERLE, JILA and University of Colorado — We apply time-dependent density functional theory, strong field approximation, optical Bloch equations, and Floquet theory to study the interaction of high intensity ultrashort laser pulses with molecules in the context of high harmonic generation, strong field ionization and nonadiabatic electron localization. For several molecules we discuss the properties of these nonlinear processes, which can be related to dynamic electron localization of coherent electron wavepacket, during the laser pulse. We show how the properties change for two color laser case and how changing the polarization of the two components influences the harmonics spectra and ionization yield. Finally we consider the modification of harmonic spectra and ionization by the interaction of two linearly polarized pulses with different orientation of polarizations of the components.

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