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Multielectron effects in molecular dynamics driven by intense laser pulses[1] YUQING XIA, JILA and Department of Physics, University of Colorado, FELIPE CAJIAO- VELEZ, Department of Physics, University of Warsaw, AGNIESZKA JARON-BECKER, JILA and Department of Physics, University of Colorado — Using time-dependent density functional theory, we study multi-electron effects on high harmonic generation (HHG) and strong field ionization (SFI) from molecules. Both HHG and SFI although related to extreme distortion of an electron wave function in a system in the presence of a strong laser field, were so far successfully studied with theories based on 'single active electron' (SAE) approximation such as 'Strong Field Approximation'. We show several examples of novel resonant coupling, when the SAE description is not sufficient and analyze situations when it can be observed in experiment.

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