

Abstract Submitted
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Ellipticity of higher order harmonics¹ YUQING XIA, AGNIESZKA JARON-BECKER, JILA and University of Colorado at Boulder — High-order harmonic generation (HHG) results from the extreme distortion of an electron wave function in a system in the presence of a strong laser field. Since both the ionization and electron recombination steps of HHG process are dependent on the particular symmetry of the active orbital and its orientation with respect to the laser field, HHG provides a unique probe of the electronic properties and structure of a molecule. We investigate in detail how the information is encoded in the intensities and phases of the harmonics. We calculate the spectra and the ellipticity of harmonics including the contributions from all orbitals using Time-Dependent Density Functional Theory (TDDFT) method. The results are compared with calculations within “Strong Field Approximation” (SFA) as well as with experiments. We investigate relative contributions from different active orbitals and in particular if it is possible to identify each orbital’s contribution.

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