Abstract Submitted
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High Harmonic Generation (HHG) from ZnO crystals by two-color pulses[1] FRANCISCO NAVARRETE, UWE THUMM, Kansas State University — While HHG from gaseous atoms is relatively well understood, HHG in solids is still debated and has been scrutinized experimentally only recently [1,2]. Even though the typical setup for HHG uses single-color intense mid-IR laser pulses, there has been interest in analyzing the effects of coherently adding a second or higher harmonic pulse, to characterize the frequency response of the sample and obtain more efficient HH conversion [3,4] . We investigated intra- and interband contributions to HHG in ZnO model semiconductors driven by 1600 nm pump and 800 nm probe laser pulses with variable relative delay (pulse shape). We numerically calculated HH spectra by solving the time-dependent Schrodinger equation in single-active-electron approximation within an adiabatic basis-set expansion, including the entire first Brillouin Zone, and analyze HH yields and cutoff frequencies as a functions of the pulse shape and intensities. [1] F. Navarrete, et al., Phys. Rev. A 100, 033405 (2019). [2] S. Ghimire, et al., Nat. Phys, 7, 138 (2011). [3] Z. Wang, et al., Nat. Comm. 8, 1686 (2017). [4] T. T. Luu and H. J. Wörner Phys. Rev. A 98, 041802(R) (2018).

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Uwe Thumm
Kansas State Univ

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