

Abstract Submitted
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High Harmonic Generation (HHG) in solids¹ FRANCISCO NAVARRETE, Kansas State University, MARCELO CIAPPINA, ELI beamlines Prague, UWE THUMM, Kansas State University — Over the last decade much progress has been made in detecting, modeling, and analyzing HHG in solids, yet even some of the most prominent features in solid HHG spectra remain poorly understood [1-5]. We present a detailed analysis of the intra- and interband HH emission, based on HH spectra calculated numerically by solving the time-dependent Schrodinger equation in single-active-electron approximation within an adiabatic basis-set expansion including the entire first Brillouin Zone (BZ). We analyze contributions to inter- and intraband HH emission from different crystal-momentum channels and compare fully numerical calculations with semiclassical approximations for a large range of driving-laser-pulse intensities and numbers of included conduction bands. In addition, we discuss the dependence of solid HHG on the pulse-shape for driving two-color pulses [4] and on impurity-doping [5]. [1] S. Ghimire et al., *Nat. Phys.*, 7, 138 (2011). [2] G. Vampa, et al., *Phys. Rev. Lett.*, 113, 073901 (2014). [3] F. Navarrete, et al., *Phys. Rev. A* 100, 033405 (2019) [4] T. T. Luu and H. J. Wörner *Phys. Rev. A* 98, 041802(R) (2018). [5] V. E. Nefedova et al., arXiv:2001.00839

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