Abstract Submitted
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Ab initio numerical methods for attosecond molecular spectroscopy[1] NICOLAS DOUGUET, University of Central Florida, HEMAN GHARIBNEJAD, BARRY SCHNEIDER, National Institute of Standards and Technology, LUCA ARGENTI, Dept of Physics and CREOL at the University of Central Florida — We present our recent advances towards the development of two original numerical methods to describe the interaction between ultra-short laser pulses and correlated molecular systems. The first method, CK-LOPT [1], uses the Complex Kohn (CK) variational approach to compute multi-photon amplitudes at the lowest-order level of perturbation theory (LOPT). It can describe molecular photoionization time delay and transient absorption spectra in relatively weak fields, when only few-photon exchanges are involved. The second method, FEDVR-TDSE, uses an hybrid Gaussian and FEDVR basis set to solve the time-dependent Schrödinger equation (TDSE), within the same close-coupling framework employed in the CK approach, and can be applied to nonpertubative regimes as well. [1] N. Douguet, B. I. Schneider, and L. Argenti, Phys. Rev. A **98** 023403 (2018),

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