Abstract Submitted
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Semi-classical approach for solving the time-dependent Schrödinger equation in inhomogeneous electromagnetic pulses[1] JIANXIONG LI, James R. Macdonald Laboratory, Department of Physics, Kansas State University (Now at Department of Physics & Astronomy, Lousiana State University), UWE THUMM, James R. Macdonald Laboratory, Department of Physics, Kansas State University — To solve the time-dependent Schrödinger equation in spatially inhomogeneous pulses of electromagnetic radiation, we propose an iterative semi-classical complex trajectory approach, termed ACCTIVE (Action Calculation by Classical Trajectory Integral in Varying Electromagnetic pulses) [1]. In numerical applications, we validate this method against *ab initio* numerical solutions by scrutinizing (a) electronic states in combined Coulomb and spatially homogeneous laser fields and (b) streaked photoemission from hydrogen atoms and plasmonic gold nanospheres. In comparison with streaked photoemission calculations performed in strong-field approximation, we demonstrate the improved reconstruction of the spatially inhomogeneous induced plasmonic infrared field near a nanoparticle surface from streaked photoemission spectra [2].

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