

Abstract Submitted
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Momentum Imaging of Electron Wave Packet Interference AI-HUA LIU, FENG HE, UWE THUMM, James R. Macdonald Laboratory, Kansas State University, Manhattan, Kansas 66502-2604, USA — The recent experiment by Gopal, *et al.*[*Phys. Rev. Lett.* **103**, 053001 (2009)] detects intriguing interference patterns in the single ionization of helium by few-cycle, phase-stabilized IR laser pulses, which Gopal, *et al.* interpret in terms of the coherent emission of distinct photoelectron wave packets within one IR cycle. By numerically solving the time-dependent Schrödinger equation for the photoionization of helium within a single active electron model, we find interference fringes in the photoelectron momentum distribution that cannot be explained as above-threshold ionization peaks. We are in the process of analyzing these oscillations in the momentum-differential electron yield in terms of interfering photoelectron wave packets.

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