

Abstract Submitted
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Attosecond photoelectron holography in strong field tunneling ionization YUEMING ZHOU, MINGRUI HE, JIA TAN, WEI CAO, MIN LI, PEIXIANG LU, Huazhong University of Science and Technology — Watching the valence electron move in molecules on its intrinsic timescale has been one of the central goals of attosecond science and it requires measurements with subatomic spatial and attosecond temporal resolutions. We propose photoelectron holography in strong-field tunneling ionization, which results from the interference of the tunneling and the rescattering electron wavepackets, to access this realm. We will first show with this method, the structure information-the phase of the scattering amplitude-can be extracted. We will also show that the attosecond charge migration in molecules can be directly measured and the tunneling ionization time in strong laser field can be determined by this time-resolved photoelectron holography.

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