

Abstract Submitted
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Shortening isolated attosecond pulses from high-order harmonic generation by controlling a trajectory parameter¹ DIAN PENG, JEAN MARCEL NGOKO DJIOKAP, University of Nebraska - Lincoln — Isolated attosecond pulses (IAPs) can be generated by spectrally filtering a high-order harmonic generation (HHG) spectrum produced by a short laser pulse. Current methods for generating shorter IAPs focus on increasing HHG cutoff energies or reducing HHG attochirp. Here, we demonstrate theoretically that the control of a trajectory parameter associated with the classical cutoff trajectory of HHG can be used to effectively reduce the HHG spectral chirp and produce IAPs of shorter duration. Based on analytic and numerical calculations of HHG spectra from an H atom produced by linearly polarized short laser pulses, we show that adjusting the laser waveform by superposing multiple (two or more) driving pulses can control this trajectory parameter and hence shorten IAP duration.

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Dian Peng
University of Nebraska - Lincoln

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