

Abstract Submitted
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Sub-20 isolated ultrashort attosecond pulse generation from He atoms by two-color mid-infrared laser fields¹ PENG-CHENG LI, Department of Physics, National Taiwan University, SHIH-I CHU, Department of Chemistry, University of Kansas — We propose an efficient method for the generation of ultra-broadband supercontinuum spectra and isolated ultrashort attosecond laser pulse from He atoms with two-color mid-infrared laser fields. High-order harmonic generation (HHG) is obtained by solving the time-dependent Schrödinger equation accurately by means of the time-dependent generalized pseudospectral method. We found that the optimizing two-color mid-infrared laser pulse allows the HHG cutoff to be significantly extended, leading to the production of ultra-broadband supercontinuum. As a result, an isolated 18 attosecond pulse can be generated directly by the superposition of the supercontinuum harmonics. To facilitate the exploration of the ultrashort attosecond generation mechanisms, we perform both the semiclassical simulation and the wavelet time-frequency transform.

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Shih-I Chu
Department of Chemistry, University of Kansas

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