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A Mechanism for Isolated Attosecond Pulse Generation by Optimizing the Laser Field PENG-CHENG LI, I.-LIN LIU, National Taiwan University, Taiwan, SHIH-I. CHU, University of Kansas — We present an isolated sub-40 attosecond generation when a hydrogen atom exposed to the optimized two-color laser field. By solving the time-dependent Schrödinger equation, we found that the optimized laser pulse shape can delay the electron emission time, leading to a relatively short emission duration for long-trajectory electrons and a relatively long emission duration for short trajectory electrons near the cutoff region. As a result, an isolated 35 attosecond pulse with a bandwidth of 93 eV is obtained directly from the supercontinuum of the high-order harmonic generation (HHG) due to the contribution of long trajectory. To better understand the physical origin of the attosecond pulse emission, we analyze the wavelet time-frequency characteristics of the HHG. Detailed results will be presented. This work was partially supported by DOE and NSF and by MOE-NTU-Taiwan.

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