

Abstract Submitted
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Generation of phase-matched 20-25eV single attosecond pulse by double optical gating¹ SHOUYUAN CHEN, QI ZHANG, KUN ZHAO, MICHAEL CHINI, ZENGHU CHANG, Kansas State University, KANSAS LIGHT SOURCE TEAM — Intensive single attosecond pulses near the ionization threshold of noble gas atoms and many molecules are desired to study nonlinear dynamics in these systems. Using double optical gating and Xenon gas target, we successfully produced high order harmonics with continuum spectra in this energy range with an 8 fs driving laser pulse. By scanning the CE phase of the driving laser, the XUV spectrum exhibited 2π periodicity, which indicates the generation of the single attosecond pulse. The continuum spectrum supports a Fourier transform limited pulse duration of 420 as. The relation between the pressure of the gas target and harmonic yield shows single attosecond pulse generation in this regime is absorption-limited.

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Shouyuan Chen
Kansas State University

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