

Abstract Submitted  
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**Numerical simulations of double optical gating for controlling attosecond pulse generation**<sup>1</sup> ZENGHU CHANG, Kansas State University — Our simulations revealed that by adding a second harmonic field to a laser field with a time-dependent ellipticity, single isolated attosecond pulses can be generated as a result of the combined power of the two-color gating and the polarization gating. The duration of the pump laser applicable to this double optical gating scheme is a factor of two longer than that for the conventional polarization gating. Pulses with less than 100 attosecond duration can be generated from helium gas even with 10 fs pump lasers. It was discovered that the number of attosecond pulses and their intensities could be controlled by either the relative phase between the two color laser fields or the carrier-envelope phase. Techniquely, 10 fs pulses are much easier to generate, propagate and manipulate than the 5 fs pulses used in the past for generating attosecond pulses.

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