Abstract Submitted
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Control of high harmonic generation using isolated attosecond pulses[1] MICHELLE MILLER, JILA and Department of Physics, University of Colorado at Boulder, CARLOS HERNÁNDEZ-GARCÍA, JILA, University of Colorado at Boulder, ANDREAS BECKER, AGNIESZKA JARON-BECKER, JILA and Department of Physics, University of Colorado at Boulder — Control of high harmonic generation (HHG) by using additional colors of light has been established as an efficient means of creating isolated pulses of light with increasingly short durations. We present a study of HHG in which isolated attosecond-duration VUV pulses are used to control the population of excited states in a single-atom system. A target He atom is prepared in its ground state, and a moderately intense 1.6 μm driving laser field is used to permit transitions to continuum states only from excited states of the atomic system. By varying the delay of the isolated attosecond pulse with respect to the driving field, this technique affords control over the moment of electron ionization, and in particular establishes a mechanism for selecting for and experimentally verifying the existence of multiply rescattering trajectories both in the temporal and frequency domains.

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