Abstract Submitted
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Investigation of coupling mechanisms in attosecond transient absorption of auto-ionizing states: comparison of theory and experiment in xenon[1] XUAN LI, DANIEL J. HAXTON, Lawrence Berkeley National Laboratory, C. WILLIAM MCCURDY, University of California, Davis — Attosecond transient absorption spectra near the energies of autoionizing states are analyzed in terms of the photon coupling to other states. A simple expression, which was used to determine the autoionization lifetimes of highly excited states of xenon in a recent transient absorption experiment, is shown to be more general and can be used to describe cases involving resonant or nonresonant coupling of the attosecond-probed autoionizing state to either continua or discrete states by a time delayed near IR pulse. Additional fast oscillations versus delay-time in the measured spectrum are shown to reveal the energies of other states, both encompassed by the radiation field of the attosecond pulse and coupled by the NIR probe pulse.

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