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Time Dependent Susceptibility of Helium[1] ANDREW SPOTT, ANDREAS BECKER, AGNIESZKA JARON-BECKER, Jila and the University of Colorado, Boulder — Understanding the interaction of an atom with a laser field during exposure to the pulse is necessary for accurate time domain descriptions of the propagation of high intensity pulses used in processes such as filamentation. To this end, we have developed an ab-initio nonperturbative method to calculate and analyze the recently observed time-dependent susceptiblity of an atom during its interaction with a short intense laser pulse. Results for the time-dependent susceptibility of helium for different laser pulse intensities will be presented.

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