Extracting accurate cross sections for one- and two-photon double ionization from a time-dependent wavepacket[1] ALICIA PALACIOS, THOMAS RESCIGNO, LBNL, C. WILLIAM MCCURDY, LBNL and UCDavis — A method is described for extracting double ionization amplitudes from a quantum wave packet for an atom or molecule after a short radiation pulse, but while the electrons are still interacting. In contrast to other time-dependent methods in which the propagated wavepacket is projected onto an approximate final state at the end of the pulse, we use exterior complex scaling to effectively propagate the field-free solution to infinite times. Our formulation allows us to use existing integral formulas for double ionization amplitudes for two electron atoms and molecules. These amplitudes can be used to obtain the complete angle- and energy-dependent ejection probabilities for the one- or two-photon ionization. We will present results for one-and two-photon double ionization of helium.

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Date submitted: 28 Jan 2008   Electronic form version 1.4