Femtosecond transparency in the extreme ultraviolet \(^1\) MICHAL TARANA, CHRIS H. GREENE, Department of Physics and JILA, University of Colorado, Boulder, Colorado 80309-0440, USA — Electromagnetically induced transparency-like behavior in the extreme ultraviolet (XUV) is studied theoretically, including the effect of intense 800 nm laser dressing of He 2s2p\(^{1}P^o\) and 2p\(^2\)\(^2S^e\) autoionizing states. We present an \textit{ab initio} solution of the time-dependent Schrödinger equation in an \textit{LS}-coupling configuration interaction basis set. The method enables a rigorous treatment of optical field ionization of these coupled autoionizing states into the \(N = 2\) continuum in addition to \(N = 1\). Our calculated transient absorption spectra show the formation of the Autler-Townes doublet in the presence of the dressing laser field. The presented results are in encouraging agreement with experiment [1].


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