**Time-dependent studies of photon-induced processes in He** S. X.
HU, J. COLGAN, L. A. COLLINS, Los Alamos National Laboratory — The fully
three-dimensional Schrödinger equation for two-electron systems, such as He exposed
to intense laser pulses, has been numerically solved within the time-dependent close-
coupling scheme. The Real-Space Product Formula (RSPF) has been implemented
in our calculations in the time propagation and is found to have advantages over
other propagators. The resulting cross-sections of two-photon double ionization and
the decay rates for autoionization states are in very good agreement with those
obtained in experiments and by other methods. In addition, the time-dependent
method enables us to examine the detailed dynamics of these processes.

Suxing Hu
Los Alamos National Laboratory