Multiphoton double ionization of the He atom$^1$ Y. LI, M. S. PINDZOLA, Department of Physics, Auburn University — Time-dependent close-coupling (TDCC) calculations are made for the multiphoton double ionization of the He atom under the influence of a fast pulse XUV laser. One set of TDCC calculations employs $l_1m_1l_2m_2$ coupling on a 2D ($r_1, r_2$) numerical lattice, a second set of TDCC calculations employs $m_1m_2$ coupling on a 4D ($r_1, \theta_1, r_2, \theta_2$) numerical lattice, and a third set of TDCC calculations employs $m_1m_2$ coupling on a 4D ($\rho_1, z_1, \rho_2, z_2$) numerical lattice. Studies are made to see which TDCC method is the most efficient at explaining measurements as the number of photons absorbed is increased.

$^1$Work supported in part by grants from NASA, NSF, and DOE