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Two-photon ionization of Helium studied with the multiconfigurational time-dependent Hartree-Fock method[1] DAVID HOCHSTUHL, MICHAEL BONITZ, Institute for Theoretical Physics and Astrophysics, University of Kiel, Germany — The multiconfigurational time-dependent Hartree-Fock method (MCTDHF) is applied for simulations of the two-photon ionization of Helium [1]. We present results for the single- and double ionization from the groundstate for photon energies in the non-sequential regime, and compare them to direct solutions of the Schrödinger equation using the time-dependent (full) Configuration Interaction method (TDCI). We find that the single-ionization is accurately reproduced by MCTDHF, whereas the double ionization results only capture the main trends of TDCI.

1] D. Hochstuhl, M. Bonitz, J. Chem. Phys. 134, (2011)

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David Hochstuhl
ITAP, University of Kiel

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