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Cross sections for non-sequential two-photon double ionization of helium[1] JOHANNES FEIST, STEFAN NAGELE, RENATE PAZOUREK, EMIL PERSSON, JOACHIM BURGDÖRFER, Institute for Theoretical Physics, Vienna University of Technology, Austria, EU, BARRY SCHNEIDER, Physics Division, National Science Foundation, Virgina, USA, LEE COLLINS, Theoretical Division, Los Alamos National Laboratory, New Mexico, USA — The generalized cross sections for non-sequential two-photon double ionization of helium at photon energies from 39.5 eV to 54.4 eV have been the subject of several recent theoretical studies. Quantitative agreement between the different approaches has not yet been reached. In this contribution, we present converged results for the total integrated and triply differential cross sections for the above process, which are based on the direct integration of the time-dependent Schrödinger equation. We compare our data with calculations from other authors and investigate to what extent electronic correlation in the representation of the double continuum affects the cross sections. We also study the influence of the pulse shape on the value of the cross sections extracted from time-dependent approaches.

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Johannes Feist
Institute for Theoretical Physics, Vienna University of Technology, Austria, EU

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