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Rescattering theory of electron and ion momentum spectra of non-sequential double ionization of atoms ZHANGJIN CHEN, C.D. LIN —
We study the non-sequential double ionization of atoms in short strong laser pulses on the basis of recently developed quantitative rescattering (QRS) model. The target dependence, CEP (carrier envelope phase) dependence and intensity dependence of the 2-dimensional correlated momentum spectra for the two outgoing electrons as well as the momentum distributions for the doubly-charged ion are investigated systematically in terms of the contributions from various electron-ion scattering mechanisms. Some of the simulated results are compared with the experimental measurements.

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