Abstract Submitted
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Two-pathway interferences in photoelectron angular distributions induced by circularly polarized femtosecond pulses.[1] NICOLAS DOUGUET, JOEL VENZKE, KLAUS BARTSCHAT, Drake University, ALEXEI N. GRUM-GRZHIMAILO, ELENA GRYZLOVA, EKATERINA STAROSELSKAYA, Moscow State University — Following up on earlier work using linearly polarized radiation [1], we analyze the characteristics of atomic ionization produced by circularly polarized two-color femtosecond pulses. Two-pathway interferences between nonresonant one-photon and resonant two-photon ionization in the vicinity of an intermediate resonance are considered in detail for atomic hydrogen. Using circularly polarized radiation significantly increases the complexity of the problem, while opening up a rich field of possible further investigations [2]. The principal properties of the photoelectron angular distribution (PAD) are obtained by solving the time-dependent Schrödinger equation and employing a second-order nonstationary perturbative approach. The dependence of the PAD on the intensities, helicities of the harmonics, pulse lengths, and carrier envelope phases is considered in detail.
[1] A.N. Grum-Grzhimailo, E.V. Gryzlova, E.I. Staroselskaya, J. Venzke, and K. Bartschat, Phys. Rev. A 91, 063418 (2015); erratum: Phys. Rev. A 93 (2016) 0199901(E). [2] N. Douguet, A.N. Grum-Grzhimailo, E.V. Gryzlova, E.I. Staroselskaya, J. Venzke, and K. Bartschat, Phys. Rev. A 93 (2016), in press.

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