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摘要: A theory of the nonlinear optical response of an atom interacting with a superposition of arbitrarily polarized fields is developed. The theory is based on the analytical solution of the boundary-value problem for an electron moving in a spherically symmetric intraatomic field and in the field of an external electromagnetic field. By means of the example of an argon atom interacting with a bichromatic field formed by the first and second harmonics of a Ti:sapphire laser, it is shown that, when an atom interacts with the field of two polarized pulses the polarization directions of which are not collinear, the response spectrum significantly depends on the laser radiation parameters-the duration and intensity of pulses, the time of delay between them, and the angle between the directions of polarization vectors. Generation of THz radiation is shown to be possible in the ionization-free regime due to intraatomic nonlinearity. DOI: 10.1134/S0030400X12030022
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