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Title:Numerical studies on terahertz radiation generated from two-color laser pulse interaction with gas targets
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Abstract:Based upon the Ammosov-Delone-Krainov ionization model, it is shown that two-color laser interaction with neutral gas generates strong ionization currents, which lead to electromagnetic emission at terahertz frequency when the gas density is at proper values. The emission efficiency depends on the difference of the phases between the fundamental and its second harmonic. The intensity ratio between the two pulses also affects the emission strength. An optimum intensity ratio has been found within our parameter region. The above ionization current theory is in agreement with one-dimensional particle-in-cell simulations with field ionization included.
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