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Greater than two orders of magnitude enhancement of high-order harmonic generation driven by two-color laser fields* T. SEVERT, J. TROß, P. TIMILISINA, G. KOLLIPOULOS, S. BUCZEK, C. TRALLERO-HERRERO, I. BEN-ITZHAK, J.R. Macdonald Laboratory, Physics Department, Kansas State University, Manhattan, KS 66506, USA — In the past decade, there has been a drive to produce intense tabletop XUV laser sources to study ultrafast dynamics in atoms and molecules. One promising technique is high-order harmonic generation (HHG) driven by two-color laser fields, which has been shown to enhance the harmonic yield over harmonics generated by only the fundamental single-color field, depending on the wavelengths’ relationship [1,2]. In preliminary data, we observe more than two orders of magnitude enhancement of harmonics produced by the two-color (800/400-nm) laser field over the 800-nm field. We also explore the enhancement’s dependence on the relative intensities between the two colors.


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