

Abstract Submitted
for the DAMOP16 Meeting of
The American Physical Society

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.

[1] C. Jin *et al.*, Nat. Comm. **5**, 4003 (2014).

[2] I. J. Kim *et al.*, Phys. Rev. Lett. **94**, 243901 (2005).

*This work and T.S. are partially supported by the National Science Foundation under Award No. IIA-1430493. JRML personnel and operations are funded by the Chemical Sciences, Geosciences, and Biosciences Division, Office of Basic Energy Sciences, Office for Science, U.S. Department of Energy. S.B. was also supported by NSF-REU program Grant No. PHYS-1461251.

Travis Severt
J.R. Macdonald Laboratory, Physics Department, Kansas State University, Manhattan, KS 66506, USA

Date submitted: 28 Jan 2016

Electronic form version 1.4