

Abstract Submitted  
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**XUV-Assisted High-Order Harmonic Generation**<sup>1</sup> SHASHANK PATHAK, JAN TROSS, ADAM SUMMERS, DANIEL ROLLES, J.R. Macdonald Laboratory, Department of Physics, Kansas State University, CARLOS TRALLERO, Department of Physics, University of Connecticut, DIMITRIOS ROMPOTIS, BENJAMIN ERK, CHRISTOPHER PASSOW, BASTIAN MANSCHWETUS, SADIA BARI, Deutsches Elektronen-Synchrotron, Hamburg, REBECCA BOLL, PATRIK GRYSHTOL, European XFEL, Hamburg — We report on the high-order harmonics generation (HHG) by a near-infrared (NIR) laser pulse in the presence of an extreme ultraviolet (XUV) field. The experiments were performed using the free-electron laser (FEL) in Hamburg (FLASH), Germany. Previous theoretical studies predict an enhancement of the HHG yield when XUV and NIR fields are combined [1]. In our experiments, we were able to observe such an enhancement, albeit very small, in the HHG yield of argon and krypton at different XUV wavelengths. Furthermore, we observe a strong decrease in the HHG yield when the XUV pulse precedes the NIR. [1] C. Buth, M.C. Kohler, J. Ullrich, C.H. Keitel, *Opt. Lett.* **36**, 3530–3532 (2011)

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