Abstract Submitted
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Probing Ultrafast Nuclear Dynamics in Halomethanes by Time-Resolved Electron and Ion Imaging[1] F. ZIAEE, A. RUDENKO, D. ROLLES, J.R. Macdonald Laboratory, Kansas State University, E. SAVELYEV, C. BOMME, R. BOLL, B. MANSCHWETUS, B. ERK, S. TRIPPEL, J. WIESE, J. KUEPPER, DESY, Hamburg, Germany, K. AMINI, J. LEE, M. BROUARD, University of Oxford, UK, F. BRAUSSE, A. ROUZEE, Max-Born-Institut, Berlin, Germany, P. OLSHIN, A. MERESHCHENKO, St. Petersburg State University, Russia, J. LAHL, P. JOHNSSON, Lund University, Sweden, M. SIMON, T. MARCHENKO, LCPMR, UPMC/CNRS, Paris, France, D. HOLLAND, Daresbury Laboratory, UK, J. UNDERWOOD, University College London, UK — Femtosecond pump-probe experiments provide opportunities to investigate photochemical reaction dynamics and the resulting changes in molecular structure in detail. Here, we present a study of the UV-induced photodissociation of gas-phase halomethane molecules (CH_3I, CH_2IBr, ...) in a pump-probe arrangement using two complementary probe schemes, either using a femtosecond near-infrared laser or the FLASH free-electron laser. We measured electrons and ions produced during the interaction using a double-sided velocity map imaging spectrometer equipped with a CCD camera for electron detection and with the Pixel Imaging Mass Spectrometry (PImMS) camera for ions, which can record the arrival time for up to four ions per pixel.

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