

Abstract Submitted  
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**Hydrogen and fluorine migration in photo double ionization of 1,1-difluoroethylene ( $\text{C}_2\text{H}_2\text{F}_2$ )**<sup>1</sup> B. GAIRE, J. RIST, F. STURM, N. GEHRKEN, A. BELKACEM, TH. WEBER, Lawrence Berkeley National Laboratory, B. BERRY, M. ZOHRABI, I. BEN-ITZHAK, J.R. Macdonald Laboratory, Kansas State University, M. KEILING, A. MORADMAND, A. LANDERS, Department of Physics, Auburn University, M. SCHOEFFLER, T. JAHNKE, H. SANN, M. KUNITSKI, R. DOERNER, University of Frankfurt — Dissociative and nondissociative ionization of 1,1- $\text{C}_2\text{H}_2\text{F}_2$  is studied with single photons of energies between 40 to 70 eV by employing the Cold Target Recoil Ion Momentum Spectroscopy (COLTRIMS) method. We present the branching ratio of nondissociative and two-body dissociative ionization channels as a function of photon energy. The yield of nondissociative ionization decreases significantly with higher photon energies. We have observed the migration of hydrogen and fluorine ions in some of the two-body dissociative ionization channels. The small yield of the  $\text{H}_2^+ + \text{C}_2\text{F}_2^+$  production indicates some interesting mechanisms for the formation of  $\text{H}_2$  molecules.

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