

## NEGATIVE ION PHOTOELECTRON SPECTRA OF HALOMETHYL ANIONS

KRISTEN M. VOGELHUBER, SCOTT W. WREN, *JILA, University of Colorado and National Institute of Standards and Technology, and Department of Chemistry and Biochemistry, University of Colorado, Boulder, Colorado 80309*; ANNE B. McCOY, *Department of Chemistry, The Ohio State University, Columbus, Ohio 43210*; KENT M. ERVIN, *Department of Chemistry and Chemical Physics Program, University of Nevada, Reno, Nevada 89557*; W. CARL LINEBERGER<sup>a</sup>, *JILA, University of Colorado and National Institute of Standards and Technology, and Department of Chemistry and Biochemistry, University of Colorado, Boulder, Colorado 80309*.

Halomethyl anions undergo a significant geometry change upon electron photodetachment, resulting in multiple extended vibrational progressions in the photoelectron spectra. The normal mode analysis that successfully models photoelectron spectra when geometry changes are modest is unable to reproduce the experimental data using physically reasonable parameters. A three-dimensional anharmonic coupled-mode analysis was employed to accurately reproduce the observed vibrational structure. We present the 364 nm negative ion photoelectron spectra of the halomethyl anions  $\text{CHX}_2^-$  and  $\text{CDX}_2^-$  ( $X = \text{Cl, Br, I}$ ) and report electron affinities, vibrational frequencies, and geometries.

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