DYNAMICS OF ACETYLENE ISOTOPOMERS REVEALED BY FREQUENCY ANALYSIS

M. JACOBSON, *Department of Chemistry, Columbia University, New York, NY 10027*; Z. DUAN, M. SILVA and R. W. FIELD, *Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA 02139*.

Analysis of the Dispersed Fluorescence spectra of Acetylene Isotopomers ($^{12}C_2H_2$, $^{13}C_2H_2$, $^{12}C_2HD$) has continued to provide information about the structure and dynamics on both the $\tilde{X}$ state and $\tilde{A}$ state potential surfaces. Sampling of specific regions of the potential surfaces is a consequence of the different integer multiple ratios among the fundamental vibrational frequencies of the different isotopomers. Insights from these studies are summarized.