INFRARED-INFRARED DOUBLE RESONANCE SPECTROSCOPY OF HCN-HCCH IN HELIUM DROPLETS: CONFORMER SWITCHING VIA SINGLE MODE EXCITATION

G. E. DOUBERLY , J. M. MERRITT , and R. E. MILLER, *Department of Chemistry, The University of North Carolina at Chapel Hill, Chapel Hill, NC 27599*.

High-resolution IR-IR double resonance spectroscopy is used to probe the vibrational dynamics of the linear and T-shaped isomers of acetylene-hydrogen cyanide solvated in helium nanodroplets. The effect of single mode excitation is to induce population transfer between the two isomers, the extent of transfer being sensitive to the identity of the vibrational mode that is pumped. For the cyanoacetylene-hydrogen cyanide system population transfer between the two isomers is not observed. Ab initio calculations are being carried out in an attempt to understand the difference between these two systems.