ACETYLENE DISPERSED FLUORESCENCE SPECTRA ABOVE THE ISOMERIZATION BARRIER

MATTHEW P. JACOBSON, MICHELLE S. SILVA, ZICHENG DUAN, ROBERT W. FIELD, *Department of Chemistry and George R. Harrison Spectroscopy Laboratory, MIT, 77 Mass. Ave., Cambridge, MA 02139*.

Dispersed fluorescence spectra of the acetylene $\tilde{A} \rightarrow \tilde{X}$ system have been recorded, and observed transitions in these spectra have been assigned which terminate on eigenstates with greater than 15,000 cm^{-1} of internal energy. Results for both $^{13}C_2H_2$ and $^{12}C_2H_2$ will be discussed, as well as implications for acetylene-vinylidene isomerization, which is expected to become feasible at 15,200 cm^{-1}.[a]

[a] J. F. Stanton and J. Gauss, J. Chem. Phys. **110**, 1831 (1999).