VIBRATIONAL OVERTONE SPECTROSCOPY OF HYDROFLUOROCARBONS

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The vibrational overtone spectra of a series of hydrofluorocarbons, including hexa- and heptafluoropropanes, were recorded up to six quanta of CH-stretching excitation. The spectra were analyzed using both normal mode and local mode effective model Hamiltonians including Fermi resonance between bright and dark states. All spectra were recorded by direct absorption techniques, lower energy overtones by long-path spectroscopy utilizing a variable pathlength (up to 20 meters) cell, and higher energy overtones by pulsed cavity-ringdown spectroscopy (CRDS). Quantitative measurements of C-H oscillator strengths are compared to values predicted by a harmonically coupled anharmonic oscillator (HCAO) model with an *ab initio* dipole moment function.