# A ROVIBRATIONAL ANALYSIS OF THE $\nu_1$ AND $\nu_2$ BANDS OF OC-DF BY FTIR SUPERSONIC JET SPECTROSCOPY

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We report the application of Fourier transform infrared supersonic-jet spectroscopy to the isotopically enriched weakly bound dimer OC-DF. Using this technique, the $\nu_1$ (DF stretch) and $\nu_2$ (CO stretch) rovibrational bands of this hydrogen bonded complex have been recorded and analyzed. The band origin frequencies, rotational constants, and centrifugal distortion constants of the $\nu_1$ and $\nu_2$ fundamentals have been determined. A Coriolis perturbation between the $\nu_1$ excited state and a dark state was observed around $J' = 13$. Neglecting the influence of other perturbations interacting at higher $J'$ levels, a two-level interaction Hamiltonian was used to predict the band origin and rotational constant of the dark state. The Coriolis interaction constant for this perturbation was determined, within error, by both the deperturbation method and a simple formula which requires only the relative intensities and frequency separation of the doublets observed at the $P(14)$ and $R(12)$ transitions. A lower limit of 1.1 ns was estimated for the vibrational predissociation lifetime of the unperturbed levels in the $\nu_1$ excited state.