HIGH RESOLUTION FTIR STUDIES OF THE ν_2 BAND OF CH_2F_2

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The very weak ν_2 (1509.1 cm^{-1}) band of the CH_2F_2 molecule was observed for the first time in the infrared. The high resolution (0.002 cm^{-1}) FTIR absorption data of this band have been analyzed by taking into account the Coriolis interaction with the ν_8 (1435.6 cm^{-1}) level. A strong intensity perturbation was observed, which enhances the intensity of the ν_2 band. More than 1000 (J"=40, Ka"=20) transitions were assigned in the ν_2 band and a simultaneous least squares fit of the data of the ν_2 and the ν_8 bands was carried out. The molecular parameters and the interaction parameters obtained from the fit, satisfactorily reproduce the observed relative inetensities of the spectrum. By simulating the spectrum, we could also determine the relative sign of the transition dipole moments for $\nu_2 \leftarrow 0$ and $\nu_8 \leftarrow 0$ transitions.