

## INVESTIGATION OF THE ROVIBRATIONAL ENERGY PATTERN IN ACETALDEHYDE IN THE MID AND NEAR INFRARED RANGES

I. KLEINER, *Laboratoire de Photophysique Moléculaire, Batiment 210, Université PARIS 11, Campus d'ORSAY, 91405 ORSAY CEDEX, FRANCE*; M. HEPP, R. GEORGES, and M. HERMAN, *Laboratoire de Chimie Physique Moléculaire, CP160/09, Université Libre de Bruxelles, B-1050, Belgium*.

Three ranges of the infrared and near infrared absorption spectrum of  $\text{CH}_3\text{CHO}$  have been recorded using a Fourier transform interferometer, under various experimental conditions: between 1300 and 3100  $\text{cm}^{-1}$  at a resolution of 0.01  $\text{cm}^{-1}$  under jet cooled conditions, between 1400 and 3200  $\text{cm}^{-1}$  at a resolution of 0.008  $\text{cm}^{-1}$  at room temperature, and between 4000 and 8000  $\text{cm}^{-1}$  at a resolution of 0.03  $\text{cm}^{-1}$  at room temperature. We are investigating specific bands in those ranges, all presenting problems of different nature, severely limiting the analysis in each case. We are studying  $\nu_5$  and  $\nu_{12}$  respectively located at 1429.91 and 1435.83  $\text{cm}^{-1}$ . They are two methyl bending fundamentals, with strong Coriolis interaction<sup>a</sup>. We are also focusing on the aldehydic CH stretch fundamental band ( $\nu_3$ ), located around 2716  $\text{cm}^{-1}$  and known to be in Fermi-type interaction with  $2\nu_6$ <sup>b</sup>. Eventually, we are considering the two first overtones of the aldehydic CH stretch, observed around 5320 and 7810  $\text{cm}^{-1}$ , presenting a dense structure.

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<sup>a</sup>H. Hollenstein, *Mol. Phys.*, 39 (1980) 1013.

<sup>b</sup>H. Hollenstein and Hs. H. Günthard, *Spectrochim. Acta* 27A, 2027 1971.