ABSOLUTE LINE INTENSITIES OF H_2CO IN THE 3.5 AND 5.7-μm REGIONS

F. KWABIA TCHANA, N. LACOME, *Université Pierre et Marie Curie-Paris 6; CNRS; Laboratoire de Dynamique, Interactions et Réactivité, UMR 7075, Case Courrier 49, 4 Place Jussieu, 75252 Paris Cedex 05, France*; A. PERRIN, *Laboratoire Inter Universitaire des Systèmes Atmosphériques (LISA), CNRS, Universités Paris 12 et 7, 61 Avenue du Général de Gaulle, 94010 Créteil Cedex, France*.

Formaldehyde (H_2CO) is detected in the earth's troposphere by infrared techniques in the 3.5 and 5.7-μm regions. Recent measurements produced line positions and relative line intensities[a] and also IR⇔UV line intensity intercomparisons [b]. For atmospheric retrievals absolute intensities and line broadening parameters are needed. For that, new Fourier transform spectra were recorded at high resolution (0.0035 cm^{-1}) at LADIR in the 1600-3000 cm^{-1} spectral region. Low pressures (up to 0.5 torr) of H_2CO were generated by warming paraformaldehyde. An appropriate monitoring of the heating temperature ($\approx 40^\circ$ C) avoided any polymerization and allowed to obtained a stable pressure of pure H_2CO ($98 \pm 1\%$). In this way accurate line positions and absolute intensities of H_2CO were measured and theoretical modelled in the 3.5 and 5.7-μm regions leading also to an intercomparison of intensities between the two spectral regions. The determination of self- and N_2-broadening coefficients is in progress.

[a] A. Perrin, F. Keller, and J.-M. Flaud, *J. Mol. Spectrosc.*, **221**, (2003) 192. A. Perrin, A. Valentin, and L. Daumont, *J. Mol. Struct.*, **780-781**, (2006) 28.

[b] A. Gratien, B. Picquet-Varrault, J. Orphal, J.-F. Doussin, and J.-M. Flaud, *J. Geophys. Res. D*, in press, (2007).