

ABSOLUTE LINE INTENSITIES OF H₂CO IN THE 3.5 AND 5.7- μ m REGIONS

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Formaldehyde (H₂CO) is detected in the earth's troposphere by infrared techniques in the 3.5 and 5.7- μ m regions. Recent measurements produced line positions and relative line intensities^a and also IR \leftrightarrow 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 H₂CO were generated by warming paraformaldehyde. An appropriate monitoring of the heating temperature ($\approx 40^\circ$ C) avoided any polymerization and allowed to obtain a stable pressure of pure H₂CO (98 \pm 1%). In this way accurate line positions and absolute intensities of H₂CO were measured and theoretical modelled in the 3.5 and 5.7- μ m regions leading also to an intercomparison of intensities between the two spectral regions. The determination of self- and N₂-broadening coefficients is in progress.

^aA. 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.

^bA. Gratien, B. Picquet-Varrault, J. Orphal, J.-F. Doussin, and J.-M. Flaud, *J. Geophys. Res. D*, in press, (2007).