

## High resolution IR diode laser spectroscopy of the C=O stretching mode of glycolaldehyde

T. R. Huet<sup>a</sup> and B. Lemoine<sup>a</sup>

<sup>a</sup>Laboratoire PhLAM, CNRS-Université Lille 1, F-59655 Villeneuve d'Ascq Cedex, France ;  
E-mail: Therese.Huet@univ-lille1.fr

Glycolaldehyde (HCOCH<sub>2</sub>OH) has been detected in biomass fires, by mass spectrometry and FTIR spectroscopy by Burling *et al* [1]. Indeed it is an atmospherically relevant carbonyl compound which is formed in the oxidation of ethene and isoprene and emitted directly from biomass fires. Meanwhile the gas phase absorption spectrum of cis-glycolaldehyde has only been studied at low resolution by Michelsen and Klaboe [2]. The laboratory observation was confirmed by a photolysis experiment [3] and the vibrational analysis by more recent *ab initio* calculations [4, 5].

The strong fundamental band of the C=O stretching mode located around 1754 cm<sup>-1</sup> has been investigated at high resolution using diode laser spectroscopy. The preliminary results of the analysis will be presented.

Support from the *Laboratoire d'Excellence CaPPA* (Chemical and Physical Properties of the Atmosphere) through contract ANR-10-LABX-0005 of the *Programme d'Investissements d'Avenir* is acknowledged.

[1] Burling I. R., Yokelson R. J., Akagi S. K. et al, *Atmos. Chem. Phys.* **2011**, *11*, 12197.

[2] Michelsen H. and Klaboe P, *J. Mol. Struct.* **1969**, *4*, 293.

[3] Niki H., Maker P. D., Savage C. M. et al, *Chem. Phys. Lett.* **1981**, *80*, 499.

[4] Senent M. L, *J. Phys. Chem. A.* **2005**, *108*, 6286.

[5] Philippe Carbonniere and Claude Pouchan, *Theor Chem Acc* **2012**, *131*,1183.