

## RECENT APPROACH TO WIDEBAND INFRARED SPECTROSCOPY OF WEAK TRANSITIONS

FATOU GUEYE, GUY GUELACHVILI, NATHALIE PICQUÉ, *Laboratoire de Photophysique Moléculaire, Unité Propre du CNRS, Université de Paris-Sud, Bâtiment 350, 91405 Orsay-Cedex, France.* (email: guy.guelachvili@ppm.u-psud.fr.); VICTOR DANA, DAVID JACQUEMART, JEAN-YVES MANDIN, *Laboratoire de Physique Moléculaire et Applications, CNRS, case courrier 76, Université Pierre-et-Marie-Curie, 75252 Paris Cedex 05, France; MARC CHENEVIER, EBRAHIM SAFARI, Laboratoire de Spectrométrie Physique, Université J. Fourier/C.N.R.S. Grenoble, BP 87, 38402 Saint Martin d'Hères Cedex, France; ALEXANDER A. KACHANOV, Picarro, Inc., 1050 E. Duane Ave. Suite H, Sunnyvale, CA 94085, USA.*

The advantages resulting from the merging<sup>a,b</sup> of time resolved step-scan Fourier transform and intra-cavity laser absorption spectroscopies are discussed and illustrated with spectra around 1 and 1.5  $\mu\text{m}$  exhibiting kilometric absorption path lengths.

---

<sup>a</sup>K. Strong, T. J. Johnson, and G. W. Harris, Visible intracavity laser spectroscopy with a step-scan Fourier-transform interferometer, *Applied Optics* **36**, 8533-8540 (1997).

<sup>b</sup>Guy Guelachvili, Time-resolved spectroscopy of stable molecules, *Vibrational Spectroscopy* **29**, 21-26 (2002).

Nathalie Picqué, Sensitive instrumental developments in high-resolution laser and Fourier transform spectroscopies, *Vibrational Spectroscopy* **29**, 83-88 (2002).

Nathalie Picqué, Guy Guelachvili, Alexander A. Kachanov, High-sensitivity time-resolved intracavity laser Fourier transform spectroscopy with vertical cavity surface emitting multiple quantum well lasers, *Optics Letters* **28**, 313-315 (2003).

Jean-Yves Mandin, Victor Dana, David Jacquemart, Nathalie Picqué, Guy Guelachvili, Multispectrum processing approach of weak  $\text{H}_2\text{O}$  profiles recorded with absorption paths ranging from 20 to 120 km, *Journal of Quantitative Spectroscopy and Radiative Transfer* **78**, 353-363 (2003).

Nathalie Picqué, Guy Guelachvili, Quantitative wibeband spectroscopy with kilometric absorption paths, *Molecular Physics* 2003 (in press).