ABSOLUTE LINE INTENSITIES IN THE ν_6 BAND OF TRANS-FORMIC ACID

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Formic acid is the simplest carboxylic acid and is found everywhere in the atmosphere, in the vapor and liquid phases. The ν_6 band of *trans*–HCOOH near 1105 cm^{-1} is the strongest band of the species and, as it is located in one of the atmospheric windows, it can be used to detect it in the troposphere and lower stratosphere.[a]

We recorded high–resolution Fourier transform spectra of samples of dry formic acid at pressures ranging from 0.11 to 3.0 mbar, using a 19.7–cm long stainless steel cell. The sample temperature was stabilized at 296 K.

Measurements of absolute line intensities require determination of the partial pressure of both the monomer and dimer of formic acid. We achieve this through analysis of the dependence with total pressure of the intensities of isolated lines of the monomer. This work also leads to measurements of pressure self–broadening parameters. Preliminary results will be presented and discussed.

[a] C. P. Rinsland and A. Goldman, *Appl. Opt.* **31**, 3669–71 (1992); T. Reiner, O. Mohler and F. Arnold, *J. Geophys. Res.* **D104**, 13943–52 (1999).