

Interactive comment on “Global distribution of upper tropospheric formic acid from the ACE-FTS” by G. González Abad et al.

G. González Abad et al.

gga500@york.ac.uk

Received and published: 28 September 2009

I recommend that the authors revise the paper somewhat to more clearly describe the differences in the HCOOH spectroscopic parameters used in the present retrievals. This is the single most important difference from previous studies but is not adequately discussed. The discussion needs to include the origin of the differences in the infrared line intensities as well as why are the recent measurements preferred over previous values. What was the HITRAN recommendation based on? It is also implied that the new spectroscopic parameters result in better fits to the ACE-FTS spectra. This needs to be shown. Minor comments: Typo: change “from the space” to “from space” in abstract. Include reference to the new spectroscopic parameters in the abstract. Abstract: are the HCOOH concentrations “related” to vegetation or are they correlated with. . .

C5335

The line intensities changed by nearly a factor of two because Perrin et al. (2007) more carefully determined the concentration of the monomer and dimer in their sample. We have included a short discussion of the changes in the spectroscopy in the text. The new spectroscopic parameters have already been recommended in the HITRAN 2008 edition. A more detailed discussion of the improvements in the spectroscopy can be found in Perrin et al. (2007).

A new plot has been included in the manuscript showing an example of a spectrum calculated with the forward model, an observed ACE spectrum and the residuals. A reference to the new spectroscopic parameters has been included in the abstract and we have change “from the space” to “from space”. HCOOH concentrations are connected with vegetation growth since the concentration increased in the growing season and previous work has demonstrated that growing plants emit formic acid.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 12465, 2009.

C5336

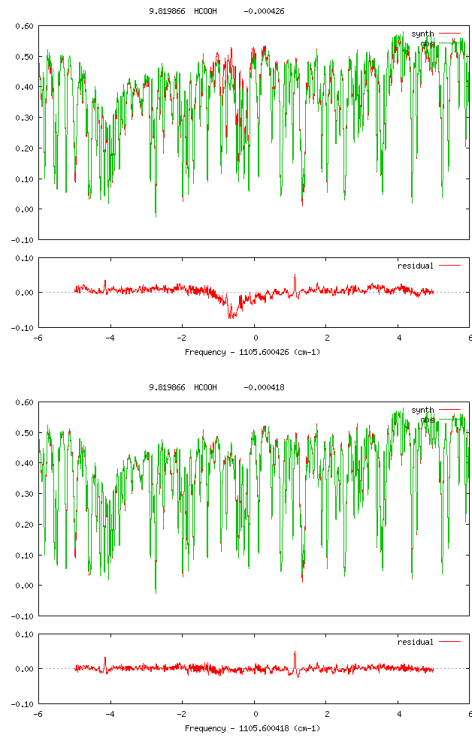


Fig. 1.

C5337