

Interactive comment on “Greenhouse gas measurements over a 144 km open path in the Canary Islands” by J. S. A. Brooke et al.

J. S. A. Brooke et al.

jsabrooke@gmail.com

Received and published: 4 September 2012

During preparation of our response, one of the comments of reviewer 2 was accidentally deleted. It is repeated below and our response is in *italics* as before. Sorry about that.

"It is necessary to improve these HITRAN line parameters substantially..." With this statement in the conclusions the authors show that their technique does not work to the intended accuracy. Does this, mean that the HITRAN data base has to be improved before the ACCURATE mission can deliver results?

Without these improvements, the ACCURATE mission would be able to deliver results

C2075

with high precision, but not a good enough accuracy to achieve its goals. It is not vital to improve all lines in the region; only the specific absorption lines and other strong nearby lines. This subject is discussed in detail in Harrison et al. ("Spectroscopic requirements for ACCURATE, a microwave and infrared-laser occultation satellite mission"). A table of targeted absorption lines for ACCURATE is available in Larsen et al. (Table 3 page 11).

REFERENCES:

Harrison, J. J., Bernath, P. F., and Kirchengast, G.: Spectroscopic requirements for ACCURATE, a microwave and infrared-laser occultation satellite mission, *J. Quant. Spectrosc. Ra.*, 112, 2347-2354, doi:10.1016/j.jqsrt.2011.06.003, 2011.

Larsen, G. B., Kirchengast, G., and Bernath, P. F.: Science objectives and observational requirements of the ACCURATE mission concept, Tech. Rep. DMI/ESA IR-DAS/ ObsReq/Oct2009, Danish Meteorol. Inst., Copenhagen, Denmark, available at: http://due.esrin.esa.int/stse/files/project/131-176-149-94_201138102155.pdf, 2009.

Interactive comment on Atmos. Meas. Tech. Discuss., 5, 3303, 2012.