

## ***Interactive comment on “Validation of SCIAMACHY HDO/H<sub>2</sub>O measurements using the TCCON and NDACC-MUSICA networks” by R. A. Scheepmaker et al.***

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Dear Editor and Authors,

The paper describes a newly available SCIAMACHY deID dataset, calculated a posteriori from the columnar H<sub>2</sub>O and HDO SCIAMACHY retrievals. The Authors did a great job by extending the dataset up to 2007 and validating it against ground-based FTIR stations from the TCCON and NDACC networks. The manuscript has a good structure and is well prepared. The paper can be published after minor technical corrections specified in the attached PDF document.

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For their future research I would like to encourage the Authors:

- 1) To use averaging kernels into account when comparing to other observations. At least in TCCON retrievals, the vertical sensitivity for HDO and H<sub>2</sub>O is appreciably different and it is varying from measurement to measurement;
- 2) To consider the uncertainty of the coefficient of temperature dependence of air-broadened half width, which can be an important source of a bias;
- 3) To give more attention to a priori information. How do you construct an a priori profile for a measurement at certain time? In TCCON retrievals only one a priori profile is used for a whole day of measurements, but the temperature and humidity can change a lot during the day introducing an error to the retrievals.

I would like to thank the Authors for a job they did. The presented dataset offers an important contribution to the atmospheric sciences community.

Sincerely, Nikita Rokotyan

Please also note the supplement to this comment:

<http://www.atmos-meas-tech-discuss.net/7/C4926/2015/amtd-7-C4926-2015-supplement.pdf>

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