

Interactive comment on “Validation of MIPAS-ENVISAT H₂O operational data collected between July 2002 and March 2004” by G. Wetzel et al.

Anonymous Referee #1

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The manuscript of Wetzel et al. presents a very detailed validation study of the operational H₂O profiles obtained in the first MIPAS-ENVISAT operational period July 2002 to March 2004 (so-called full resolution measurements). The authors compare MIPAS-E H₂O with H₂O from independent measurements of different previously validated instruments. The presented study is clearly structured and well written and will be of large interest to all potential users of MIPAS-E H₂O. I recommend publishing this manuscript in ACP after addressing the comments below.

Major comments:

1. Harmonize the figures: It is confusing for the reader if the format of the figure

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changes, e.g. Fig. 1, combined total error as dashed lines, in Fig. 18 as error bars, or sometimes the mean difference is plotted in the figure (Figs. 11, 14, 16), sometimes not

2. Mention the smoothing with the averaging kernel not only in the figure captions but also in the text

Minor comments:

1. p. 4441, l. 11: include a reference for the smoothing
2. p. 4445, l.17 -19: the results are a bit short here, write more about in which altitude regions the differences are, what the mean difference is etc., like for the other instruments
3. p. 4447, l. 15: up to 75 % at 140 hPa, not 180 hPa
4. p. 4448, l. 5: mention mean difference also in the text, not only in Fig. 11
5. p. 4449, l. 11 and p.4450, l. 10: latitudinal coverage ranges from 80S to 80N, but the comparison (Figs. 13 to 16 and Tables 3 and 4) is from 90S to 90N
6. p. 4452, l. 19: as Fig. 18 has hPa as vertical axis, use hPa instead of km in the text as well
7. p. 4487, Fig. 18: include the smoothing in the figure caption

Technical corrections:

1. p. 4441, l. 17: typo: Instrument -> instrument

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 4433, 2013.