

Interactive comment on “Extending the satellite data record of tropospheric ozone profiles from Aura-TES to MetOp-IASI” by H. Oetjen et al.

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This paper is valuable for the creation of long term tropospheric ozone data record from different instruments. Since it deals with the error characterisation which is a prerequisite of merged tropospheric data, therefore I would suggest that the title should be more precise:

'Analysis of extended data...' or 'Characterization of...' etc...

Major Comments:

This work deals with great rigor the error sources, their mathematical description and explanation which is excellent for the reader. However other error sources has not been

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considered. Following parameters can also have an impact on the retrieved ozone:

- Albedo
- Aerosol
- Pressure
- Polarization

A rough estimation should be added describing the underestimation of the theoretical errors vs. empirical (See Fig. 8)

Technical Corrections/ Minor Comments:

Page 3: Line 30: '...from multiple TIR instruments'. Please name all of them.

Page 3: Line 31: 'This study concentrates on mid-latitudes in 2008'. Please explain the reason for selecting this sample.

Page 7: Line 26: Fig. 2 has been mentioned before Fig. 1.

Page 8: Line 16: '...MATCH...'. Please expand.

Page 9: Line 25: 'Chi-Square > 1.3'. Please explain the threshold selection of 1.3.

Page 10: Line 30: 'burst height'. Please explain this term.

Page 10: Line 4: 'correction factor > 15' Page 12: Line 20: 'cloud fraction ... < 6' Page 12: Line 22: 'algorithm' = algorithm.

Page 12: Line 26: 'Only one global ozone....covariance matrix are used'. Please verify in a diagram or text that this restriction does not affect your statistics/results.

Page 14: Line 26: '...are similar for different locations...'. Any reasons for this systematics?

Page 16: Line 13: '...consistent with theoretical error...'. See 'Major Comments'.

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Page 22: Line 8: 'Hilton.....yccomplishments' = accomplishments.

Page 24: Line 1: 'Rodgers.....Practise' = Practice. Page 26: Table 1: 'all' = All.

Figure 1: Colors for water/Smoothing too close. Legend not readable.

Figure 2: Change the caption into 'Three microwindows (red lines)'.

Figure 3/6/7/9: Change 'height' into 'Pressure'. Add Y-Axis of geom. height. Y-title on the rhs with 'Approx. geom. height [km]'.

Figure 6/7/9: Add more labels ('1000 800 600 etc. hPa').

Interactive comment on Atmos. Meas. Tech. Discuss., 7, 7013, 2014.