

***Interactive comment on “Intercomparison of polar ozone profiles by IASI/MetOp sounder with 2010 Concordiasi ozonesonde observations” by J. Gazeaux et al.***

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This paper deals with validation of vertical distribution of ozone retrieved from satellite measurements by means of comparison with ozone sounding data at high latitude in the southern hemisphere. Very interesting topic for the polar scientists and for the whole scientific community. Data are presented in a comprehensive way and the methods used for the analysis are quite simple and clear. The discussion is supported by a good stuff of figures. Reading is not very fluid for problems related to written English and to the positioning of some sentences in the wrong place. These aspects will be

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detailed in the specific comments. In general a good paper with some interesting remarks, but with a reduced explanation on the retrieval of vertical ozone distribution from ozone sounding balloons as well as from satellite. Anyway the source of the missing information are furnished with the references therein. The results/discussion section is well-groomed and describes exhaustively the findings of the comparison as well as what is shown in figures 5 and 6. The conclusions report the concordance of what is reported in the previous sections with the findings by other authors, and assess this study as seminal work for future studies. The reference section is complete and all the references are cited in the manuscript. A weak point of the manuscript regards the style: personally in scientific papers, I do not like the use of the first plural person (we did, we found, we calculated ...) I think a depersonalization of the work make the presentation even more clear and focuses the attention on the results obtained. I recommend the publication of this paper in AMT after, the modification and clarification suggested by the anonymous reviewer #1 and the implementation of the comments below:

P7924 L7 - Please insert 'measurements' or 'field' between 'Concordiasi campaign'

P7924 L7\_L10 - I believe this sentence could be : "The main objective of the campaign was the satellite data validation. With this aim 20 zero-pressure...."

P7924 L11 - replace 'those' with 'the'

P7924 L20 - 'This study allows FOR a better....'

P7925 L6 - please remove 'see' from '(see Fig. 1)' here and also in the following

P7925 L18 - remove 'launched from McMurdo and'

P7925 L20 - 'with radiosondes and WITH Electro-...."

P7925 L21 - replace 'will be' with 'is'

P7925 L23 - replace 'will be' with 'is'

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P7925 L24 - remove 'the' before ozone

P7925 L27 - '...retrieved by IASI and measured by...' became: '...retrieved from IASI and measured with the...' P7925 L29 \_ P7926 L2 - I suggest: 'The paper is organized as follows: section 2 gives a description...; section 3 presents and explains the...; in section 4 the results are presented and discussed and section 5....'

P7926 L10 - replace 'which provide' with 'providing'

P7926 L12 - replace '..IASI provide data with high...' with '...IASI data have high...' and 'As it use the...' with 'As the spectrometer measures/analyzes the...'

P7926 L17\_L19 - I suggest the authors to modify with: 'FORLI-O3 inputs are: i) the spectral radiances extracted from IASI L1C data; ii) cloud cover, temperature and humidity profiles selected from IASI L2 records. These last dataset is retrieved by European.....(EUMETSAT)'

P7926 L24\_L25 - please modify '...39 fair spaced layers of 1 km thickness...' and remove 'from the surface to 39km'.

P7927 L2 - I believe there is something missing. I suggest: 'The AK are function of several factors as surface properties, temperature profiles and atmospheric composition.'

P7927 L9\_L11 - '...were aimed to document three highly interrelated topics: i) the depletion..., ii)the ozone layer...,iii) the stratospheric dynamics.'

P7927 L12 - replace 'by' with 'with'

P7927 L17\_L20 - Please move sentences to the end of line 13

P7928 L9 - move 'at 475K' after ...'(PVUs)'

P7928 L21\_L22 - modify with: '...high-resolution ozone profiles measured with the sonde and with IASI profiles...' P7929 L2 - replace 'profile' with 'vertical distribution'

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P7930 L11 - replace 'own' with 'specific'

P7930 L19 - add 'away' between 'far' and 'from'

P7931 L1 - replace 'dependent' with 'depending'

P7931 L11 - remove 'by'

P7931 L11\_L12 - I suggest: 'In the lower stratosphere, this difference confirms....'

P7931 L17 - how large is this variation? Please define and specify.

P7932 L16 - replace 'cold' with 'low' and please give some more infos regarding the range of temperature in the McMurdo region.

P7932 L19 - replace 'data' with 'retrieved ozone profiles'.

P7932 L19\_L21- I suggest: 'Some of the launched balloons were equipped with GPS receivers....as the closest IASI profiles are selected.'

P7933 L1 - replace 'by' with 'with'

P7933 L2\_L4 - please quantify and specify how much is the 'high gradient'. What do you mean with 'regular events'? maybe when there is no ozone depletion. Please rephrase and clarify.

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