

## ***Interactive comment on “Monitoring of atmospheric composition using the thermal infrared IASI/MetOp sounder” by C. Clerbaux et al.***

### **Anonymous Referee #2**

Received and published: 22 May 2009

This paper provides an overview of the IASI instrument and some of the trace gas retrievals. It is generally well written and useful, with only some minor corrections needed. The results presented are very impressive!

1. Pg. 8309, l. 2 “satellites”; l. 15, “a unique”; l. 21 “for such satellite missions”.
2. Pg. 8310, l. 14 “in a polar orbit”.
3. Pg. 8313, l. 15 “allows the reduction of”
4. Pg. 8316, l. 8, for IASI it is not the lineshape that gives vertical resolution for IASI because at  $0.5\text{ cm}^{-1}$  apodized resolution no individual lines are resolved. There are basically two cases for IASI: species for that are optically thin and have no vertical resolution (i.e., DOFS  $< 1$ ), and species like water for which at least some lines are

optically thick. The degree of optical thickness controls the height at which sampling occurs so that a very optically thick line has a weighting function that peaks high in the atmosphere. A clear statement of these points is required here.

5. Pg. 8318, l. 26, km? and “total column content”.

6. Pg. 8320, l. 14, “elevated”.

7. Pg. 8322, l. 4 and 13, replace “orbit” by “overpass”; l. 6, “edge of a continent”.

8. Pg. 8323, l. 12, “pioneering”.

9. Pg. 8324, l. 26, “authors”.

10. Pg. 8322, replace the word “contamination” in two places by “contribution”. Some people are interested in the stratosphere! Replace “CH<sub>3</sub>OOH” by “CH<sub>3</sub>OH”.

11. Pg. 8366, “Arctic” in figure caption. Some of the units need to be explained, e.g., kg/kg for water (k is not capitalized) and ppm for methane. What exactly is being plotted in these two cases? The figures and scales are also hard to read.

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Interactive comment on Atmos. Chem. Phys. Discuss., 9, 8307, 2009.

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