

Interactive comment on “An assessment of the accuracy of the RTTOV fast radiative transfer model using IASI data” by M. Matricardi

Anonymous Referee #2

Received and published: 7 July 2009

Review on the paper

‘An assessment of the accuracy of the RTTOV fast radiative transfer model using IASI data’

by M. Matricardi

The paper of Matricardi presents an interesting and important comparison of fast radiative transfer models with IASI observations.

I have two major concerns, which should be addressed before publication:

a) The presentation should be improved. Especially the structure of the discussion and conclusion part should be improved and shortened. Also, as there are very many

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acronyms used in the paper, they should be summarised in an additional table

b) The paper focuses on technical aspects. Thus I suggest to label the paper ‘technical note’. Alternatively, it should be made more clear (especially in the abstract), what the specific implications on atmospheric chemistry are.

Additional comments:

In my opinion, it should also be possible to use LBL models in fast retrieval schemes. This could be achieved by using look-up-tables. The authors should comment on this possible option.

I suggest to use more clearer acronyms in the figures. This would help the reader a lot. It should be possible to replace e.g. ‘MTK_CKD_UMBC’ by something better. Alternatively, at least additional information should be put in the captions.

In section 4 it should be explained what cycle 33R1 and IFS means; also it is said that 3 monitoring experiments are performed. What are these 3 experiments? (in the conclusions it is stated that 4 monitoring experiments are performed.)

page 7, line 6: night-time should be day-time

The order introducing the figures might be changed. It seems that Fig. 5 appears before Fig. 6.

I suggest to remove large part of the grey literature

The references to Rizzi and Tjemkes are missing

The bracket at the end of the y-axis labels of Fig. 1,2 should be corrected.

Figures Fig. 7, 11, 15 are not consistent. Is there a reason for these differences? I suggest to harmonise the structure of these figures.