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Atmospheric Chemistry and Physics Discussions

Interactive comment on "The 2007–2011 evolution of tropical methane in the mid-troposphere as seen from space by MetOp-A/IASI" *by* C. Crevoisier et al.

Anonymous Referee #2

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The manuscript "The 2007–2011 evolution of tropical methane in the mid-troposphere as seen from space by MetOp-A/IASI" submitted by Crevoisier et al. for publication in ACP covers an important topic, presents new material and is well written (incl. nice figures and a comprehensive list of references). I recommend publication in ACP after the (minor) comments listed below have been considered by the authors.

General comments:

First of all: Sorry for the late review. I overlooked the deadline. I have carefully read the manuscript and also the comments of Referee Number 1 (R1).

In general, I agree with the comments of R1.

I agree with R1 that providing a detailed errors analysis would be good. I assume that an error analysis has been performed for single observations but I can imagine that providing reliable errors for the highly averaged retrievals as shown and discussed in the manuscript may be a challenge. If it seems not possible to provide reliable error estimates for the data shown it is important to clearly state this in the manuscript. In any case I recommend to add a least a short summary of the existing error analysis information. It is good that standard deviations are shown (e.g., in Fig.2) as this indicates the scatter of the retrievals and therefore quantifies (primarily, I guess) random errors.

I guess TCCON has not been used for validation (see general comment of R1) as the standard TCCON products are total columns (or XCH4) whereas the data product from IASI is a mid/upper tropospheric (sub)column. A meaningful validation using TCCON is therefore probably not possible. I recommend to at least state why TCCON cannot be used to validate the data product shown.

Specific comments:

Already covered by the comments of R1.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 23731, 2012.