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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Evaluation of ECMWF ERA-40 temperature and wind in the lower tropical stratosphere since 1988 from past long-duration balloon measurements" *by* T. Christensen et al.

T. Christensen et al.

Received and published: 31 May 2007

This response include responses to all three referees.

Reply to Anonymous referee 1

Anonymous referee 1 requests one clarification regarding the quoted standard deviations.

Reply: The quoted standard deviations are population std. dev.

Reply to Anonymous referee 2

Anonymous referee 2 has 6 numbered questions/comments:

1. The data were extracted at 1.5 degree resolution, but 1.125 is available. Would this affect the results?

Reply: Based on the investigation of the effect of increased resolution carried out by Knudsen et al. (ACP, 6, 5391–5397, 2006), we would expect only small changes.

2. P2, left column, para. starting "similarly" What levels were discussed?

Reply: the paragraph has been revised to include levels.

3. P2 right column. Change "A large number" to the actual number.

Reply: Will be amended in the revised paper.

4. P4 bottom left. Maybe don't plot deltaTobs=0.

Reply: We will do this if time allows, but we do not consider it crucial.

5.P5. bottom right. It could also be due to changes in the number and type of data assimilated.

Reply: Agreed. We believe this is covered already in the sentence ending with "... but likely the data assimilated."

6. P7 Figure 6. This should be at the same scale as Figure 4.

Reply: We believe the zoomed scale in Fig. 6 is important in order to see the details.

Reply to Anonymous referee 3

Referee comment: I think the data in figures 4 and 5 justify a stronger statement about a major shortfall in the variability of meridional wind justify in ERA-40 at these levels and latitudes.

Reply: Thanks for your suggestion to put a stronger emphasis on the significance of the inability of ERA-40 to capture the variability in v. We believe the same can be argued for the zonal wind. We will elaborate more on this in Section 4, and mention it

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in abstract and conclusions.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 3423, 2007.