Atmos. Chem. Phys. Discuss.,
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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Quantification of water vapour transport from the Asian monsoon to the stratosphere" *by* Matthias Nützel et al.

Anonymous Referee #1

Received and published: 22 March 2019

Review of Nützel et al.

General comments

This well-written paper describes the contribution of the Asian Monson to the water transport into the stratosphere. The paper is suitable for acceptance in ACP, once the authors address one general comment and several, minor, specific comments.

My general comments concerns the simulations on which the authors base their study are for the period Jan 2010 – Dec 2014. Is this a long enough period to provide reasonable, if not definitive, conclusions? I suggest the authors discuss this point at end of sect.4, where you describe weaknesses in the study, and in sect. 5.

Specific comments

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Discussion paper

P. 6

Table 1 caption: To help the reader, introduce what JA and JF mean.

L. 9: Perhaps provide more information on the differences between TWC(i) and TWC – from the text it seems to me that TWC represents the quantity for the whole tropics, and TWC(i) represents the quantity for the region under consideration.

P. 7

Fig.2: For this figure and similar figures, I suggest authors indicate what endpoints of colour scale show. E.g., red/blue high/low values of H2O.

P. 9

L. 13: I suggest the authors quantify this “excellent agreement”.

P.13

L. 5: Could the authors speculate on the possible reasons of this result?

P. 14

Fig. 6: Remind the reader why you scale the total H2O by 0.3.

L. 1-2: I suggest probably -> likely, unless you can relate the phenomenon to a statistical distribution.

P. 15

Fig. 7: Remind the reader why you do the scaling.

P.16

Table 2: I suggest the authors highlight in bold the highest value(s).

L. 9: I suggest the authors avoid terms like “nicely”. Maybe use “align well”.

P. 17

L. 6: Why is this remarkable? Avoid subjective language.

P.19

L. 4-5: Perhaps the authors could provide more details of this explanation.

P. 20

L. 6: Do you need “clearly”? Omit needless words. Same elsewhere in the text.

L. 20: Why is this interesting? Avoid subjective language.

P. 21:

L. 4: Why is this remarkable? Avoid subjective language.

P. 24

L. 25: Perhaps mention the quality of the efficiency. Is it relatively high/low in itself? And compared to other studies?

P. 25

References: Check spelling of “O’Neill”, including use of capitalization.

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