Atmos. Chem. Phys. Discuss.,
https://doi.org/10.5194/acp-2018-292-AC1, 2018

Atmospheric Chemistry and Physics Discussions

Interactive comment on "The Climatology of Brewer-Dobson Circulation and the Contribution of Gravity Waves" *by* Kaoru Sato and Soichiro Hirano

Kaoru Sato and Soichiro Hirano

kaoru@eps.s.u-tokyo.ac.jp

Received and published: 5 May 2018

We greatly appreciate Dr. Šácha's invaluable comments and suggestion to confirm that $\overline{w}^*$ integration nears zero.

We calculated a latitudinal average of $\overline{w}^*$ at each pressure level and confirmed that it is generally less than a few percent of the $\overline{w}^*$ maximum at each level (Figure 1). So, we do not think that the uncertainty in $\overline{w}^*$ explains much the difference in the stream functions between the two methods using $\overline{w}^*$ and using $\overline{v}^*$. We appreciate the important information that the inequality still remains when using the model reaching up to 150 km. It is naturally expected that the mesospheric gravity wave forcing is

Printer-friendly version

Discussion paper

responsible to the structural difference but it is interesting that it is not all.

We will add descriptions and discussion regarding the compensation in the revised manuscript, if we have a chance of revision. Thanks are also for indicating the typo regarding the boundary condition. The correct one is $\overline{\Psi}(\phi, z) = 0$ at the pole.

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2018-292, 2018.

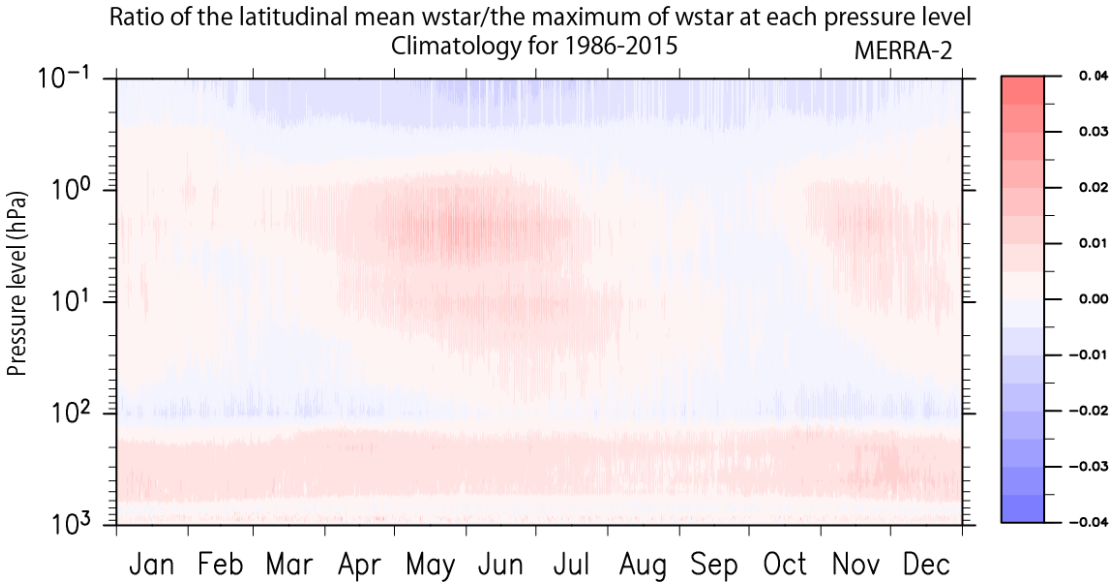

Fig. 1.

Printer-friendly version

Discussion paper