

Review: Net influence of an internally-generated QBO on modelled stratospheric climate and chemistry by Hurwitz, Oman, Newman and Song

Recommendation: Accept

This is a well written and useful study of the influence of an internally generated QBO on stratospheric climate and chemistry. It will be valuable to other modelling groups seeking to implement similar changes. I would have no problem if the paper were accepted in its current form, but there are some suggestions below that the authors might want to consider.

1. p13500 l20. It might be worth noting the differences in the annual frequency at 30hPa and below between MERRA and Q.
2. p13504 l21. Could the authors note the correlations between equatorial winds and 60 N/S. It is useful to put the model in the context of what is known from the re-analysis (given that there is some uncertainty in the relationship with the limited observational record).
3. p13505. Linked to the above, given the small number of QBO-W and QBO-E phases which makes any differences subject to quite a bit of sampling uncertainty is it worth doing these comparisons for this particular experiment?
4. Fig. 2. I'm not sure that the t-test is the right statistical framework for the variance comparison. Wouldn't an f-test be more appropriate?
5. Fig. 3. I didn't understand the sign convention for v^* . Is this poleward positive for both hemispheres? If so, might be worth noting.
6. Fig. 5. I couldn't find a reference to this in the document, is it needed