

Second review of “Does the coupling of the semiannual oscillation with the quasi-biennial oscillation provide predictability of Antarctic sudden stratospheric warmings?” by Nordström and Seppälä

The authors have been very responsive to the comments of the reviewers and have thoroughly revised their manuscript. It is now much improved and, it seems to me, does a good job of getting across a message to the reader.

I have some minor comments which mainly have to do with the presentation.

Minor comments

I appreciate that the authors are trying to pull together their findings in graphical form in Figure 7. However, I found that it took some real effort, going back and forth between the text and the figure, to actually absorb this information. A good goal would be to have one figure that captures the message that you are presenting in a way that is accessible. One possibility would be to extract the four panels in the top two rows into a separate figure since they at least do not have the confusion of different dates used for the different axes. Then the panels from the bottom row (or maybe only one of them is necessary) could be prominently labeled to indicate that you are comparing early-season zero wind line with late-season divEP.

(l. 316) “The early winter equatorial SAO-QBO wind pattern interaction with the simultaneous EP flux convergence, and subsequent modulation of the waveguide, reflects mid-latitude waves up and pole-ward, resulting in deceleration of the equatorward side of the polar vortex above 100 hPa.” Do you actually mean wave reflection? In principle a wave guide can affect the direction of wave propagation in a way that is not a reflection but is a guide, as the term suggests.

(l. 354-355) It is OK to mention the MJO amplitude but seems a bit of a stretch (even with the qualifier “could”) to imply that it plays a role in these events. You do not show anything about this index in quiet years or how it affects planetary wave generation and propagation. I suggest remove the last sentence of this paragraph.

Editorial comments:

1. (l. 24) “the easterlies around 60°S at 10 hPa reached ~60 ms⁻¹” Do you mean only at some longitudes? It’s confusing because the first part of the sentence describes zonal mean zonal winds.
2. (l. 36-37) “shrunk the ozone hole to its smallest size ever observed”. Maybe better to say something like “shrunk the ozone hole to its smallest size since its onset in 1980”.
3. (l. 58-59) “It is widely thought that SSWs are the product of an interaction between planetary waves and the atmospheric mean flow (Matsuno, 1971).” The importance of wave-mean flow interaction in SSW has been demonstrated in hundreds of studies. The term “thought” comes across as dismissive of this well-established understanding. It would be better to say something like “Numerous investigations have demonstrated that ...”
4. (l. 87) remove “generally understood to be” (i.e., it is stronger)

5. (1. 300) “zonal wind reversal is less focused” What does this mean?