Atmos. Chem. Phys. Discuss.,
https://doi.org/10.5194/acp-2017-882-SC1, 2017

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Detection of a climatological short break in the Polar Night Jet in early winter and its relation to cooling over Siberia" *by* Yuta Ando et al.

G. Manney

manney@nwra.com

Received and published: 25 December 2017

This seems to be an interesting and useful paper overall, and may be the first long-term climatology to focus on the evolution of the zonal mean winds in Arctic fall/early winter. However, I do feel that the abstract and introduction misrepresent the state of knowledge and the literature on early winter in the stratosphere. The interannual variability in November and December in the NH, while less than that later in winter, is substantial and has been widely reported, at least since the work of Labitzke et al (1977, 1982). Numerous studies have described early winter minor warmings (see Manney et al, 2002, and numerous references therein) and shown them to be very common (occur-

Printer-friendly version

Discussion paper

ring in nearly every Arctic fall/winter season). It follows from the ubiquity of early winter minor warmings that the strengthening of the PNJ in fall/early winter is not monotonic (see, e.g., Figure 10 of Manney et al, 2002), and nowhere in the literature have I seen it suggested that it might be. The statement (in the abstract and introduction) that "It is generally acknowledged that the climatological PNJ speed increases monotonically from October to December" is thus contradicted by the literature. I believe this paper would benefit greatly from a more complete and balanced summary of the literature on the early winter circulation in the NH, and from some brief discussion of how the results shown here relate to those in previous work that showed early winter zonal mean wind evolution for individual winters and/or climatologies for shorter periods of years than the current work.

(The Labitzke et al papers are already cited in this manuscript.)

Manney, G.L., W.A. Lahoz, J.L. Sabutis, A. O'Neill, and L. Steenman-Clark, Simulations of fall and early winter in the stratosphere, Q. J. Roy. Meteorol. Soc., 128, 2205–2237, 2002.

Interactive comment on Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2017-882, 2017.

Printer-friendly version

Discussion paper