

Interactive
Comment

***Interactive comment on* “Mid-winter lower stratosphere temperatures in the Antarctic vortex: comparison between observations and ECMWF operational model.” by M. C. Parrondo et al.**

M. C. Parrondo et al.

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Reply to referee #1 (H. Roscoe)

We thank Howard Roscoe for his positive review of the manuscript. As concern the comment “it is largely a technical paper, with no major new atmospheric chemistry or physics discovery....I must leave it to the editors whether the manuscript is sufficient for ACP as it stands” we would like to point out that the paper addresses the observed bias in ECMWF Antarctic temperatures and its implications on PSC simulations and, hence, on ozone depletion estimation. We don't restrict to merely extend the previously reported ECMWF bias (i.e. Gobiet et al., 2005; Höpfner et al., 2006) in a more detailed way, but estimate how this bias affects the area where PSC can potentially appear.

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Interactive Discussion

Discussion Paper

The "Aims and Scope" of ACP has the sentence: "The journal scope is focused on studies with general implications for atmospheric science rather than investigations which are primarily of local interest."

The paper has general implications for atmospheric science since it shows the deficiencies of one of the most important assimilation model of the stratosphere, which is intensively used by a large number of research groups.

However, it is not the purpose of the paper to deal with trends in PSC in which a far larger database would be needed. The work is limited in time to 2003 winter since only during that period data of daily radiosondes at Belgrano were available (QUOBI Antarctic campaign).

Minor comments

1.- Roscoe et al. (QJMS-2003) show a 8-15 K cooling for November (mid-spring) at the 100 hPa level starting in late seventies onwards with no trend number explicitly given. However, winter trend at Halley from the same paper yields -1.8 ± 0.6 K for the 1980-2000 period which is in good agreement with 1 K/decade obtained by others. Since we restrict the paper to winter time we will add a short sentence with the results of Roscoe-2003 and corresponding reference.

2.- Pressure at the 375K level on 2003 ranged between 100-88 hPa from July to October. Certainly 80 hPa is too high and it must be due to a typing error. We substituted "80 hPa" by "100-90 hPa" and "30 hPa" by "25-35 hPa"

Technical comments

3. Chemical Transport Models (CTM), corrected 4. English errors corrected

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