Atmos. Chem. Phys. Discuss., 9, C9451–C9453, 2010
www.atmos-chem-phys-discuss.net/9/C9451/2010/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Radiosondes stratospheric temperatures from 1957 to 2008 at Dumont d'Urville (Antarctica): trends and link with Polar Stratospheric Clouds" *by* C. David et al.

C. David et al.

christine.david@latmos.ipsl.fr

Received and published: 8 January 2010

The comments of Mrs S. Radanovics are interesting. Here are some answers: - The trend estimate of 2.3 K/decade is the rigth magnitude. It corresponds to the trend we can derive from the raw data including the whole period. We do not believe this trend is a real one and can be interpret as an anthropogenic signal, but we have provided this value because it is what we can estimated from figure 1. It is probably not clear that this value was only given for information and as a comment of figure 1, and this can be improve in a next version of the manuscript. - The second comment is very interesting and valuable. However it is difficult to use unpublished work. The identification of the

discontinuity is a challenge and comparison with ERA40 that also includes its own discontinuities is difficult to be used as true reference. The version 1.4 and 1.5 do not give exactly the same results showing that the identification of such discontinuities is not obvious. In this study we have included in our trend data analyses a step function to test if such discontinuities could have been occurred. The results show that no statistically significant change has been detected. More investigations in collaboration with the group of Wien university can be performed in the future but most probably trend results will not change much according of our tests. - The temperature sonde, associated with the ozone sonde, has not changed since 1992. The comparison between the both series does not reveal any systematic changes associated with sonde changes. The distribution of temperature anomalies using a subset according to sonde type does not show a clear attribution of one mode to a specific sensor (see figure below).

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 25687, 2009.

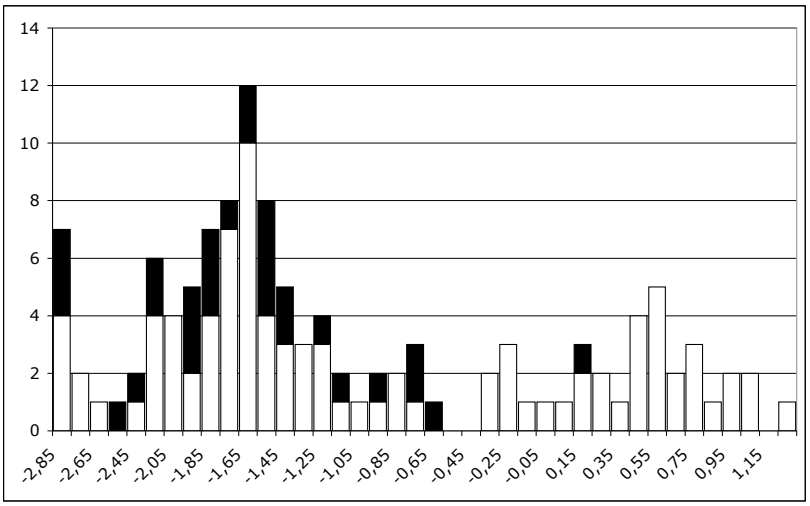
14
12
10
8
6
4
2
0
-2,85
-2,65
-2,45
-2,05
-1,85
-1,65
-1,45
-1,25
-1,05
-0,85
-0,65
-0,45
-0,25
-0,05
0,15
0,35
0,55
0,75
0,95
1,15

Fig. 1.