

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.

Anonymous Referee #3

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The paper presents an analysis of radiosonde data set and lidar measurements over a region where measurements are scarce. Temperature trends obtained over Dumont d’Urville are compared with results published for other Antarctic stations. PSC occurrence trends are in good agreement with trends in T<T NAT occurrence. All these results are very useful to the scientific community and the paper is worthy of acceptance in ACP. I suggest some minor comments I hope the authors will consider.

Specific Comments

Pag 25692-25. In spite of the several changes in meteorological instrumentation you have not found any inhomogeneities in your data set according with the statistical anal-

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ysis used. How sensitive is your model to detect inhomogeneities?

Pag 25993-14 “Meteo_PTU and O3-PTU are similar “. Could you provide information about the radiosonde used for O3-PTU during the period?.

Page 25693 2-4 You say ozone sounding started in 1992, while in page 25704-13, the date is 1989. Could you please check the dates?

Pag 25694 - 5 “The discrepancy can be due the size of the balloon”. I don’t agree this idea. The size of the balloon can influence the maximum altitude reached by the balloons and its ascent rate, but not the differences between both data set.

Pag 25698- 17. When you calculate temperature trends considering data inside and outside separately, the trends for both cases are still positive. So that, the position of the station with respect to the polar vortex doesn’t explain why the temperature trend at DDU in spring is opposite to those found by Radel et al (2009) for the inner stations.

Fig 1. Y- axis title should be temperature (K) instead of T anomaly (K)

Figure 8b. Two minor comments for this figure.

1. Unit for y – axis is not indicated. 2. I suggest to rotate the axis, in order to obtain a better visualization.

Figure 9 b and c. What altitudes are the T< T NAT trends calculated?

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