

Interactive comment on “Turbulent vertical diffusivity in the sub-tropical stratosphere” by I. Pisso and B. Legras

Anonymous Referee #5

Received and published: 29 June 2007

General Comments

This manuscript presents an analysis of vertical diffusivity in the subtropical lower stratosphere using balloon measurements of ozone together with trajectory calculations. It is clearly written and presents new and interesting results. I think this manuscript will be suitable for publication after the minor comments below are addressed.

Specific Comments

Pg 4, l 23: Is Del Castillo-Negrete and Morrison a relevant reference for subtropical jets being a transport barrier?

Pg 6, l 11: A reference and some description is needed here for the Hibiscus campaign.

Also is it Hibiscus or HIBISCUS?

Pg 6, l 21: "SF"=?

Pg 7. Why is the earlier flight called SF2?

Pg 9, Eq 3-5. Is the Green function approach actually used? I don't see where it is used, and think eqs 3 to 5 and related discussion should be removed.

Pg 10, l 23: More information is needed on the REPROBUS simulation, e.g., when/how was it initialized.

pg 11, l 11-: Some discussion of the vertical motion shown in fig 5b relative to isentropes would be useful. In particular is upward movement from 13.5 to 16.5 km consistent with insentropic motion?

pg 13, l 20: Figure 9 is referred to before figure 8.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 6603, 2007.

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Interactive Discussion

Discussion Paper