

## ***Interactive comment on “The Quasi-biennial Oscillation and annual variations in tropical ozone from SHADOZ and HALOE” by J. C. Witte et al.***

**J. C. Witte et al.**

Received and published: 23 June 2008

Response to "General comments": We wish to thank the referee for the helpful comments and suggestions. We agree that one of the take home messages of the paper is that ozonesonde measurements reveal incredible structure in the ozone and temperature fields, not seen from HALOE. We have made such statements in the summary and analyses section where HALOE cannot capture the structure and time varying amplitudes of the BDC that are seen in the ozonesondes.

Response to "Specific comments":

We agree with the referee that it would be a good idea to also highlight the power spectrum of the BDC. The magnitude of the QBC swamps the BDC signal which is significant between 16-19 km. We have added an additional plot to Figure 6 that highlights

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

the annual periodicity in the SHADOZ ozone anomaly record.

Since the paper was submitted Randel et al. [2007] was published which focuses exclusively on the BDC region, between 16-19km as seen mainly by tropical ozonesondes. The paper uses the SHADOZ tropical database to demonstrate the role of vertical upwelling on the annual variations of the ozone, CO and temperature fields. Our study is complementary, extending beyond the annual variations to include the connection between the QBO and BDC. We also calculate the meridional length scale of the BDC that, as far as we know, is a first time in-situ calculation. The paper has since been published:

Randel, W. J., Park, M., Wu, F., and Livesey, N.: A large annual cycle in ozone above the tropical tropopause linked to the Brewer-Dobson circulation, *J. Atmos. Sci.*, doi:10.1175/2007JAS2409.1, 4479-4488, 2007.

[Interactive comment on Atmos. Chem. Phys. Discuss., 8, 6355, 2008.](#)

[Full Screen / Esc](#)

[Printer-friendly Version](#)

[Interactive Discussion](#)

[Discussion Paper](#)

