Southern Hemisphere Additional Ozonesondes (SHADOZ) Updates: 2014-2015

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Ozonesonde data support satellite validation, model evaluation and studies of atmospheric pollution and dynamics. Strategic ozonesonde networks coordinate and schedule launches in a fixed region to answer specific questions (Thompson et al., *Atmos. Environ.,* 2011)*. The SHADOZ network, Figure 1, has archived more than 6000 ozone and P-T-U profiles since 1998 from a dozen tropical and subtropical stations with 2-4 launches monthly. Three updates since our last report to the GMD Annual Conference are presented. There have been visits by NOAA and NASA personnel to 5 stations. We have begun the first major re-processing of SHADOZ data to account for inhomogeneities in ozonesonde and radiosonde type according to the guidelines of the WMO-sponsored O3S-DQA. Large trends in free tropospheric ozone have been discovered using SHADOZ and pre-SHADOZ ozone profiles over Irene, South Africa (+25%/decade, 1990-2007), and Reunion Island (+ 40%/decade, 1992-2011; from Thompson et al., *ACP*, 2014). Finally, comparisons of SHADOZ ozone in the upper troposphere and lower stratospheric with OMPS ozone amounts will be shown.

* Strategic ozone sounding networks: Review of design and accomplishments, http://dx.doi.org/10.1016/j.atmosenv.2010.05.002. *Or Atmos. Environ.,* **45,** 2145-2163, 2011.

Thompson, A. M., N. V. Balashov, J. C. Witte, G. J. R. Coetzee, V. Thouret, F. Posny, Tropospheric ozone increases in the southern African region: Bellwether for rapid growth in southern hemisphere pollution?, *Atmos. Chem. Phys.,* 14, 9855-9869, 2014.

Figure 1. Operating SHADOZ stations, 2013-2014