

SHADOZ (Southern Hemisphere Additional Ozonesondes) Network Report: Updates and Station Activities

A.M. Thompson¹, J. Witte^{2,1} and R.M. Stauffer^{3,1}

¹NASA Goddard Space Flight Center (GSFC), Atmospheric Chemistry and Dynamics Laboratory, Greenbelt, MD 20771; 301-614-5905, E-mail: anne.m.thompson@Nasa.gov

²Science Systems and Applications, Inc. (SSAI), Lanham, MD 20706

³Universities Space Research Association (USRA) - NASA Postdoctoral Program (NPP), Columbia, MD 21046

SHADOZ (Southern Hemisphere Additional Ozonesondes) has collected more than 7,000 profile sets from ozonesondes and radiosondes in the tropics and subtropics since 1998. Measurements originate at 14 long-term stations; a map of the operational stations and data are archived at . The NOAA/GMD Ozone and Water Vapor Group is a major part of SHADOZ data collection, training, and data quality assurance protocols. Through affiliation with the Network for Detection of Atmospheric Composition Change (NDACC; www.ndsc.ncep.noaa.gov) and posting of profiles to the NASA Aura Validation Data Center (AVDC) and WMO's World Ozone and UV Data Centre (woudc.org), SHADOZ data are distributed across the satellite, monitoring and modeling communities. We review recent major activities of SHADOZ, including re-activation of several SHADOZ stations. The most significant new SHADOZ activity is the first major reprocessing of the 18-year ozonesonde dataset to account for changes in ozonesonde instrumentation and biases among stations (Witte et al., GMAC Paper; *JGR*, in review). Also significant - we have applied innovative ozone profile classification, e.g., Self-Organizing Maps (Stauffer et al., *JGR*, 2016), to SHADOZ data. SOM climatologies are associated with meteorological variability and offer a value-added alternative to simple monthly means for model evaluation and satellite algorithms.

SHADOZ Sites: <https://tropo.gsfc.nasa.gov/shadoz>



Figure 1. Operational SHADOZ stations in 2016-2017.