

## The Trials and Triumphs of SHADOZ: The Who's Who of Tropical Ozone Profiles

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SHADOZ (Southern Hemisphere Additional OZonesondes) is the premier archive for tropical and sub-tropical electrochemical concentration cell (ECC) ozonesonde data. Since 1998, vertical profiles of ozone and P-T-U (pressure - temperature - humidity) have been collected from 14 stations in close collaboration with ESRL/GMD and international partners. We summarize the collective efforts to homogenize datasets, assign uncertainty estimates, and converge towards optimizing standard operating procedures among SHADOZ stations. One major accomplishment of the past year has been the reprocessing of 13 stations ozonesonde datasets. The homogenization of SHADOZ datasets have led to improved agreements between sonde and independent instruments, both ground- and space-based to within 2%. Another milestone is deriving uncertainty estimates for ozone profiles and total column. The first approach shows overall uncertainties in total column ozone are 5-6% and are comparable to the variability found in satellite overpasses. Finally, the Juelich [Germany] Ozonesonde Intercomparison Experiment (JOSIE) (Oct-Nov 2017) invited SHADOZ representatives from eight stations to test operating procedures, new solutions, and instrument biases against the world standard ozone photometer. JOSIE underscores the importance of community-driven consensus in operating procedures and equipment, optimal solution/ECC combinations, and completeness of metadata reporting. We summarize our campaign activities and preliminary findings.



**Figure 1.** Map of SHADOZ stations. Data are publicly available at <https://tropo.gsfc.nasa.gov/shadoz>.