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Intercomparison of sea surface temperature observations from multiple instruments and the COAR Bulk flux model during the Tropical Warm Pool International Cloud Experiment

E Schulz (1), R. M. Reynolds (2) and P. Minnett (3)

(1) Centre for Australian Weather and Climate Research, Bureau of Meteorology, Australia,

(2) RMR Company, USA, (3) RSMAS, University of Miami, USA

The Tropical Warm Pool International Cloud Experiment (TWP-ICE) was conducted in Darwin, Australia in the monsoon season over a 25-day period. The aim was to comprehensively describe the composition and evolution of cirrus clouds that occur ubiquitously year-round in the convectively active parts of the tropics. The observational infrastructure consisted of a set of state-of-the-art remote sensors, such as cloud radars, lidars and various radiometers (one of ARM's ARCS sites), the Australian Bureau of Meteorology weather radars, wind profilers, and a network of automatic weather stations and radio soundings, and a number of aircraft. The marine domain was observed by the R/V Southern Surveyor which collected marine meteorology, air-sea flux, sea surface temperature (SST), oceanographic and radio sonde data.

Here we compare observations of SST at the ship location from ship based in situ and radiative measurements (from the M-AERI and ISAR instruments), and a number of satellite platforms, with estimations derived from the COAR Bulk flux algorithm.