

A COMPARISON OF BATHY MESSAGES WITH XBT SOURCE DATA
FROM THE HAWAII TO TAHITI SHUTTLE EXPERIMENT

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ABSTRACT

The quality of bathy messages from the Hawaii to Tahiti Shuttle Experiment was determined to be poor: 13.8% of all radio-transmitted temperature-depth pairs were in error by at least 0.5°C , and 9.5% of all pairs were in error by more than 20 meters. The source of these errors was determined to be, overwhelmingly, shipboard coding inaccuracies. Two methods of error detection were developed and found to be partially successful: 20% of all depth errors in the thermocline greater than 20 meters and 31.6% of all temperature errors greater than 1°C in the mixed and deep layers were found to be detectable. Despite the general poor quality of the bathy message data, it is found that bathy messages may be useful for crude estimates of heat storage and geostrophic velocities.