

## Characterizing Upper Ocean Characteristics of the Tropical Indian Ocean Using AXBT/AXCTD Measurements

Wang, Q., D. Alappattu, D. Trampp, and R. Corey Cherrett

Naval Postgraduate School, Monterey, CA

This study focuses on the upper ocean characteristics in the tropical Indian Ocean during the active and suppressed phases of Madden-Julian Oscillation. Data used for this study was gathered by a NOAA WP-3D research aircraft during the Dynamics of the Madden-Julian Oscillation (DYNAMO) research project. The aircraft-based measurements extended from 13 November to 13 December 2011, when a total of 12 research flights were flown near the island of Diego Garcia or within the vicinity of the southern DYNAMO array. During these flights, Airborne eXpendable Bathy Thermographs (AXBT) and Airborne eXpendable Conductivity Temperature and Depth probes (AXCTD) were deployed from the P-3 for ocean profiling. For the first time, in situ measurements with extensive spatial coverage were made in the upper ocean of this region of the world where MJO is initiated. In this poster presentation, we will first discuss the data quality control and quality assurance efforts for all measured profiles, especially for the AXCTD profiles. We will then take a first look into the large scale variability in the DYNAMO domain and vicinities, and the time variability of the tropical Indian Ocean during the WP-3D operation period. The measurements of the upper ocean reveal enhanced mixing in the active MJO phase and the presence of a warm, stratified, and variable upper ocean in the suppressed phase of MJO. The AXBT/AXCTD measurements also suggest increased mesoscale variability under active convection. Lastly, results from recent efforts of re-processing AXBT and AXCTD profiles will be discussed.