Post-Processing and Highlight of DYNAMO NCAR Dropsonde and Radiosonde Data

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During DYNAMO, an NCAR AVAPS dropsonde system on board the NOAA P-3 aircraft was deployed from November 9 through December 13, 2011 for thirteen research flights and collected 469 dropsonde soundings. Two NCAR GAUS radiosonde systems were deployed on the island Diego Garcia and Ship R/V Revelle, respectively. A total of 1316 radiosonde soundings were collected. All soundings have been carefully quality-controlled using several post-processing methods; including Atmospheric Sounding Processing Environment (ASPEN), an automated sounding QC software application, and visual examination of each sounding to identify special problems. For a small percentage of the soundings, there were special issues to be resolved which required special post processing. Several corrections are applied to the data, including, for the first time, a radiosonde ground check pressure correction and an NCAR radiation dry bias correction, used to address humidity data biases. At the request of the Principal Investigators, vertical winds were computed for the dropsonde soundings using our special algorithm described in detail in Wang et al. (2009). The 1785 high-quality, high resolution soundings collected from NCAR dropsonde and radiosonde systems during DYNAMO will play an important role in fulfilling the scientific objectives of the field experiment and are expected to offer a significant contribution to other research areas as well future; such as validation of satellite, model and reanalysis data. We will also provide some scientific highlights of the data.