



High-Resolution upper air measurement from Cape Verde during the NASA African Monsoon Multidisciplinary Analyses mission

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The NASA African Monsoon Multi-disciplinary Analyses (NAMMA) mission took place from Cape Verde, approximately 600 km west of Dakar, Senegal. Aircraft and ground-based measurements were staged from the island of Sal while a large number of radiosondes were released from Praia, on the island of Sao tiago 150 km south of Sal. NAMMA is part of the multi-national mission to study, among many other parameters, West African-originating easterly waves that may develop into damaging hurricanes as they move westward over the southern Atlantic Ocean. The field mission took place between August 15 and September 14, 2006. Radiosondes with Global Positioning System (GPS) capability obtained 4-D position information (time, altitude, latitude, and longitude). The data are aiding the community to reach a better understanding of the morphology of easterly wave development and their sustainment. High-resolution radiosonde measurements of temperature, relative humidity, and wind at a vertical resolution of 4-6 meters were obtained every 4 hours from Cape Verde Islands. The high vertical- and temporal- resolution of the measurements effectively captures significant features of convection and easterly wave processes. Time series of temperature, water vapor, and wind available during the 28-day mission are discussed. Five waves were observed passing south of Praia; differences in their development were observed. Examples are provided that discuss methods used to detect wave passage, the effect of the Saharan Air Layer, and day-to-day change of available energy, as are future plans. Data were distributed to all NAMMA participants and are available at <http://msfc.nasa.gov>.