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# Trends and variability of daily and extreme temperature and precipitation in the Caribbean region, 1961-2010

Tannecia Stephenson (1), Lucie Vincent (2), Theodore Allen (3), Cedric Van Meerbeeck (4), and Natalie McLean (1)

(1) Department of Physics, The University of the West Indies, Mona, Jamaica, (2) Climate Research Division, Environment Canada, Toronto, Canada, (3) Division of Meteorology & Physical Oceanography, University of Miami, Miami, Florida, (4) Caribbean Institute for Meteorology and Hydrology, St. James, Barbados (cmeerbeeck@cimh.edu.bb)

A workshop was held at the University of the West Indies, Jamaica, in May 2012 to build capacity in climate data rescue and to enhance knowledge about climate change in the Caribbean region. Scientists brought their daily surface temperature and precipitation data for an assessment of quality and homogeneity and for the preparation of climate change indices helpful for studying climate change in their region. This study presents the trends in daily and extreme temperature and precipitation indices in the Caribbean region for records spanning the 1961-2010 and 1986-2010 intervals. Overall, the results show a warming of the surface air temperature at land stations. Region-wide, annual means of the daily minimum temperatures (+1.4°C) have increased more than the annual means of the daily maximum temperatures (+0.95°C) leading to significant decrease in the diurnal temperature range. The frequency of warm days and warm nights has increased by more than 15% while 7% fewer cool days and 10% fewer cool night were found over the 50-year interval. These frequency trends are further reflected in a rise of the annual extreme high and low temperatures by $\sim$1°C. Changes in precipitation indices are less consistent and the trends are generally weak. Small positive trends were found in annual total precipitation, daily intensity, maximum number of consecutive dry days and heavy rainfall events particularly during the period 1986-2010. Finally, aside from the observed climate trends, correlations between these indices and the Atlantic Multidecadal Oscillation (AMO) annual index suggest a coupling between land temperature variability and, to a lesser extent, precipitation extremes on the one hand, and the AMO signal of the North Atlantic surface sea temperatures.