



Tropical Storm Decadal Variability in the North Atlantic and Pacific

W.-L. Tseng (1), N. Keenlyside (2), and K. Hodges (3)

(1) GEOMAR, Helmholtz Centre for Ocean Research Kiel, Kiel, Germany(wtseng@geomar.de), (2) Geophysical Institute and Bjerknes Centre, University of Bergen, Bergen , Norway (noel.keenlyside@gfi.uib.no), (3) University of Reading, Reading, UK(kih@mail.nerc-essc.ac.uk)

Tropical storm activity is influenced by large-scale modes of climate variability, such as ENSO and the MJO, through associated changes in sea surface temperature (SST), vertical wind shear, and humidity. Here, these relationships are examined in a five member ensemble of atmospheric model simulations forced with observed SST and cover the period 1870-2009. The simulations are cross-validated by using two different SST products: HadISST and ERSST. The model horizontal resolution is approximately 1 degree. Tropical Storms are identified and tracked using vorticity at 850hPa with an objective tracking algorithm.

The simulations are robust to the two different SST products. The model reproduces well the observed climatology and variability of Tropical Storms. However, there is a genesis bias in Atlantic. ENSO and Atlantic Multi-decadal Variability (AMV) influence on storms is reasonable simulated, indicating significant predictability. Apart from the influence of the El Nino and AMV, the impact of decadal modes of variability in the Pacific and Atlantic are also investigated.