

## A Gradient-Based Comparison Measure for Visual analysis of Multifield Data Supplemental material

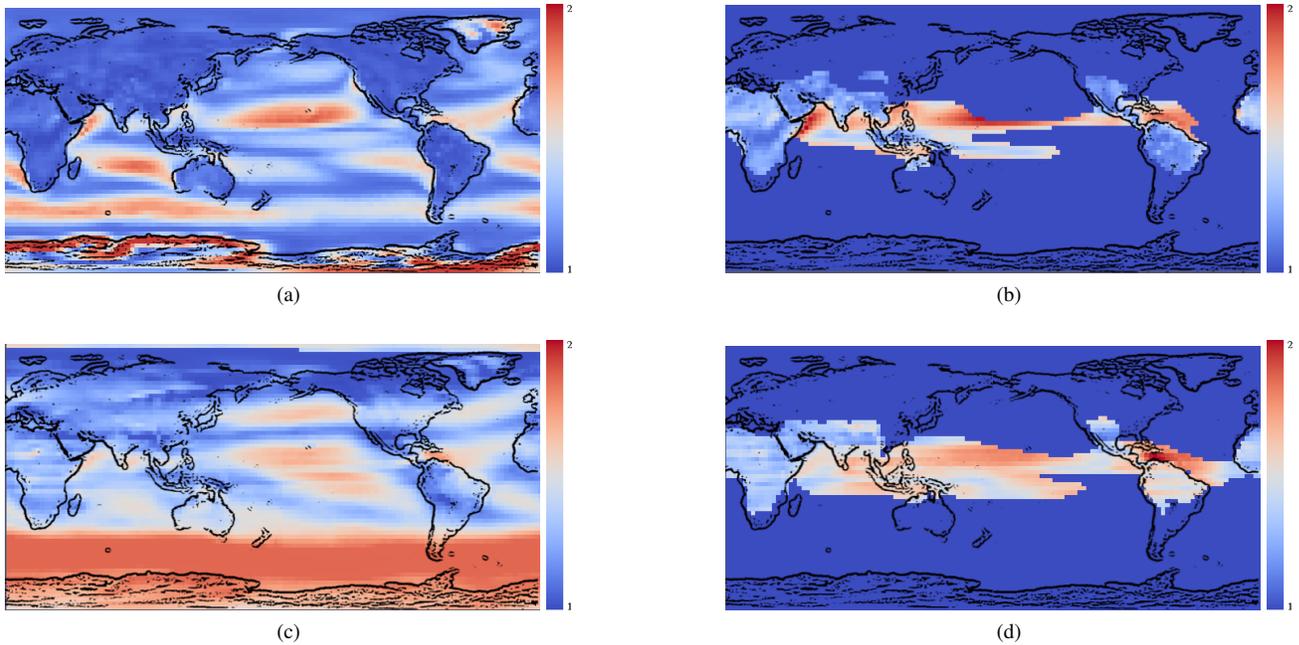


Figure 1: Study of wind patterns and storm tracks using data from different climate models. Global wind pattern captured by the multifield comparison measure: (a) model bccr-bcm2.0 and (c) model bccr-bcm2.0. Storm track for the years 1976-2000 highlighted by the multifield comparison measure: (b) model bccr-bcm2.0 and (d) model:cccma-cgcm3.

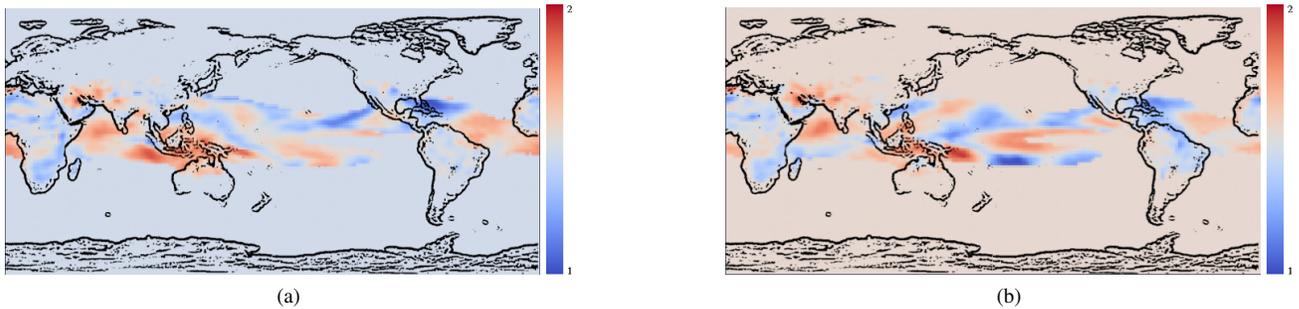


Figure 2: Changes in storm tracks studied by computing the difference in multifield comparison measure computed for two periods of 25 years. (a)  $\eta^F$  for the years 1985-2010 subtracted from  $\eta^F$  for the years 1885-1909. (b)  $\eta^F$  for the years 2075-2099 subtracted from  $\eta^F$  for the years 1885-1909. The distribution of the difference between both images indicate that there could be changes in storm patterns with possibly stronger winds over the Indian Ocean, near Phillipines, the Central Pacific and off the coast of Indonesia/Australia. The conditions could be less stormy off the American coasts (both east and west), northern and southern Pacific and off the Chinese coast. This however does not preclude individual storms being of higher strength as suggested by Webster et al. (Reference: Webster, P.J., G.J. Holland, J.A. Curry, and H.-R. Chang, "Changes in Tropical Cyclone Number, Duration, and Intensity in a Warming Environment", Science, 309, 1844,1846, 16 September 2005.) Also, these results could be dependent upon theECHAM5 coupled ocean-atmosphere model used. We note that the signals are stronger in the figure on the right.