The Impact of Tropical Sea Surface Temperatures on the Vertical Wind Shear and on the Cyclone Development over the Bay of Bengal

Juergen Bader[1,2] and Roshin P. Raj[1,2]
[1] *Bjerknes Center for Climate Research, Bergen, Norway*
[2] *Geophysical Institute, University of Bergen, Bergen, Norway*

Since approximately the 1950s there is an out-of-phase relationship between the vertical wind-shear and the number of cyclones over the Bay of Bengal. We have analysed in observations and using the Atmospheric General Circulation Model (AGCM) ECHAM5 the relationship between tropical sea surface temperatures, the vertical wind shear and the cyclone development over the Bay of Bengal on decadal time-scales. The AGCM ECHAM5 is able to reproduce the observed decadal change of the vertical wind shear over the Bay of Bengal when forced with the observed history of sea surface temperatures. We have conducted SST-sensitivity experiments to find out which ocean basin contributes to the observed vertical wind shear over the Bay of Bengal and have addressed the question if it is sufficient to only take into account Indian Ocean SSTs.