



Sea Surface Temperature Perturbations associated to Intraseasonal Oscillations of the Tropical Convection

J.P. Duvel (1) and J. Vialard (2)

(1) Laboratoire de Météorologie Dynamique, ENS, Paris, France (2) Locean, Université Paris VI, Paris, France

Tropical Rainfall Measuring Mission's (TRMM) Microwave Imager (TMI) SST dataset from 1998 to 2004 and the National Oceanic and Atmospheric Administration's (NOAA) OLR dataset are used to characterize regions of strong intraseasonal SST variability associated with large-scale organised convective activity over the Tropical Indo-Pacific region. Using an improved climatology of the ocean mixed layer depth together with the TMI-SST time series reveals that the amplitude of the intraseasonal SST variability is strongly linked regionally to the mixed layer depth and intraseasonal amplitude of the air sea fluxes. This suggests that air-sea fluxes and vertical ocean processes are the main physical sources for the intraseasonal SST variations in most of the tropical area. The Local Mode Analysis (LMA) is then used to extract the SST variations specifically associated to large-scale organized intraseasonal convective events. During boreal winter, the SST response is the greatest and most coherent in the West and Central Indian Ocean between 5°S and 10°S. The physical explanation of this strongest SST intraseasonal response over this region will be detailed. During boreal summer the SST response is maximal over the Bay of Bengal but there are large variations in the intraseasonal convection-SST patterns between May (bogos onset), June (onset) and July-August, when the monsoon is fully established.