



Intraseasonal variability of the ocean - atmosphere interface in the Gulf of Guinea

G. de Coëtlogon (1) and S. Janicot (2)

(1) Centre d'Etude Terrestre et Planétaire (gdc@cetp.ipsl.fr), (2) Laboratoire d'Océanographie et du Climat: Expérimentation et Approche Numérique (serge.janicot@locean-ipsl.upmc.fr)

TMI Sea Surface Temperature (SST) and QuikSCAT surface winds are used to investigate the intraseasonal variability in the Gulf of Guinea. Empirical Orthogonal Functions decompositions show the existence of peaks around 10 - 14 days in the power spectrum of each field, and a statistical signature of a strong retroaction between SST and surface winds within a timescale of a few days (typically 5 - 6 days). A Maximum Covariance Analysis confirms this strong coupling between oceanic and atmospheric surface fields, and emphasizes the significant role of the equatorial seasonal "cold tongue". Lagged regressions of both fields on the SST timeserie in the cold tongue area show that the latter is clearly forced by stronger-than-usual easterlies in the Gulf of Guinea during the previous week, linked with a stronger-than-usual anticyclonic system in the South Atlantic. On another hand, a colder-than-usual equatorial ocean is followed within a few days by stronger-than-usual monsoon winds entering the West-African continent. Eventually, some hints of the SST influence on the latitudinal position of the Inter Tropical Convergence Zone are shown.