



Seasonal migration of the Tropical Atlantic Warm Pool Associated with the Inter-Tropical Convergence Zone

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The Atlantic Warm Pool (AWP) is an ocean system strongly coupled to the Marine Inter-Tropical Convergence Zone (ITCZ) and its precipitation, and to a lesser extent to adjacent coastal precipitation. In our study, the ocean mixed layer heat budget equation is used in a climatological numerical simulation of the NEMO model to identify and quantify the mechanisms controlling the seasonal migration of the AWP. We define the latter as the region with SST larger than 27 °Celsius, and identify the terms of the budget that explain the migrations of the two isothermal fronts north and south (respectively NF and SF).

The results show that the NF meridional migration is mainly controlled by air-sea fluxes, while oceanic processes are damping them. The ocean plays a major role in the SF meridional migration, except in the Gulf of Guinea, where migration is controlled by air-sea fluxes.

We present a detailed analysis of the contributions of ocean processes and heat fluxes at the air-sea interface.