



## **1979-1998 Global atmospheric features associated with the SST-forced signals on West African rainfall. AGCM simulations**

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The performance of the multimodel ensemble in reproducing the seasonal cycle, rainfall variability and SST-rainfall coupled patterns simulated by different AGMs has been analysed in Mohino et al. (2009). From this work, some important changes have been found in the obtained regional SST patterns and the associated rainfall response when considering the 1979-98 period in comparison with the 1957-98 one. In the present study, the analysis of the global oceanic and atmospheric projections will give some additional insights to understand the observed changes, taking into account that the second period of study takes place after the known climate shift of the 70's.

The results suggest an enhancement of the Pacific-Atlantic connection associated, in the multimodel ensemble, with a rainfall dipole between the Gulf of Guinea and Sahel. An important feature is that this connection seems to be led during this period by the Atlantic ocean. Also, another connection occurs in relation to the Atlantic and Indian basins, where higher convection in the gulf of Guinea is associated with higher convection over the equatorial Indian basin.

We conclude that the Pacific dominates alone on the WAM when considering the decades before the 70's, while when we focus after 1979 we see a global scale pattern, including Indian, Pacific and Atlantic basins, affecting the summer WAM variability. In this way, the ENSO phenomenon can be interpreted, during the last decades of the XX century, as a global scale pattern in which all the basins seem to operate on the anomalous convection over the GG and Sahel.