



West African Monsoon precipitation response to Equatorial Pacific Sea Surface Temperature anomalies. Dynamical Mechanisms

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In the framework of the AMMA-EU project the main observed inter-annual modes of co-variability between West African rainfall and SST in different ocean basins were obtained by performing multi-dimensional statistics based on Extended Maximum Covariance Analyses. Based on the results, idealized SST anomaly patterns were defined as boundary conditions for sensitivity experiments by the AGCMs participating in the project. In this study we focus on the response to the SST pattern found for the Pacific and examine its influence upon WAM precipitation by using the UCLA AGCM. This SST anomaly pattern, which resembles El Niño in the tropics, is related to reduced precipitation over the WAM region. The impact is established through changes in the Walker and Hadley circulations, with enhanced subsidence over the WAM region.