



Decadal Emergence Variations of the Observed Inter-annual Rainfall Anomaly Patterns over West Africa

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Two large-scale interannual rainfall anomaly patterns describe most of the summer rainfall variability over sub-Saharan West Africa. One is a dipole distribution between Sahel and Guinea Coast summer rainfall anomalies and the second one is characterized by anomalies of the same sign over these two areas.

During the 1950s and 1960s the interannual rainfall shows a significant out-of-phase relationship between the Sahel and the Guinea Coast rainfall.

This dipole-like relationship is weakened during recent decades and precipitation anomalies of the same sign emerge more often.

A statistical analysis of the observed West African interannual rainfall anomalies is performed to test whether this change in rainfall patterns could be explained by internal atmospheric variability or due to changed sea surface temperatures. Additional SST-sensitivity experiments with the AGCM ECHAM5 have been performed to test the hypotheses.