



# **ACTIVES PHASES AND PAUSES OF THE WEST AFRICAN MONSOON AND ASSOCIATED ATMOSPHERIC DYNAMICS.**

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This study comes within the research of the characterization of the intra-seasonal modulations of the West Africa monsoon system during its annual cycle. Indeed, these fluctuations are not yet well understood and documented, particularly with regard to the main periods of installation of the various Western African rainy seasons and the phases of transition separating them. Also very few studies were interested in these onsets. Objective diagnostic analyses based on PCA decomposition, Varimax rotation and low-pass filters ( $\geq 1$  month) are performed on the 5-day CMAP rainfall data over West Africa. The northward excursion of the rainbelt can be divided into 4 basic sub-periods each composed of an equilibrium period (pause) followed by a rapid increase (active phase) of the system. We suggest easy criteria to automatically detect these events and propose a calendar for the 23 years. These Pauses are associated to the weakening of the whole of the Monsoon system's atmospheric components. The end of the two main pauses (#1 and #3) are respectively associated with the onset of the first Guinean rainy season and the sahelian rainy season. In addition, it appears that these pluviometric modulations are not specific to the west-african system monsoon.

Indeed, these can be detected over a larger scale and be linked with deep convective modulations propagating over the whole tropical region. The question of the relation between Madden-Julian oscillations and these pluviometric modulations over this region will also be dealt with.