



## **Synoptic Variability of the Tropical Convection over Central Africa**

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Spectral analysis of multiyear OLR daily time series over the equatorial Central Africa reveals very striking and reproducible periodic fluctuations of the convective activity around the equinoxes with a 5-6 day period in April and with a 3-4 day period around September. On the contrary of what is observed during West African Monsoon, these periodic fluctuations of the convective activity over Central Africa is not clearly linked to synoptic wave perturbations. It is thus hypothesized that the interactions between the convective activity and the surface may explain these periodic convective perturbations. Since maximum amplitude and size of the convective perturbations are observed over the Congo Basin, the orography of the region may also play a role in organizing the convection at this synoptic scale. Such an organization of the convection is indeed necessary to have an effect on the surface fluxes at a scale sufficiently large to feedback on the convective instability during the following days. Since the time-scale of these oscillations is similar to the time-scale of West African easterly waves, these processes could also play a role in the interaction between the waves and the convection, the wave playing the same role as the Congo Basin in organising the convection. The good simulation of this kind of phenomenon is thus of interest for synoptic weather forecast not only over Central Africa but also for other tropical land regions. However, ECMWF and NCEP re-analyses hardly contain such robust and reproducible oscillations over Central Africa, showing that improvements are needed, most probably in the representation of diabatic processes.